FAA Safety BRIEFING

November/December 2011

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The November/December 2011 issue of FAA Safety Briefing *takes an in-depth look at the nation's wide array of public-use airports. Articles highlight the benefits of exploring new places to land as well as help raise awareness of runway safety and wildlife hazards.*

Cover photo courtesy of FAA's Air Traffic Organization (ATO)

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Jumpseat

JOHN ALLEN
DIRECTOR, FLIGHT STANDARDS SERVICE

Oh, Say, Can You See?

Whether by dawn's early light, the evening's twilight, or any other time of day, there is no sight more beautiful — more awe-inspiring — to a pilot than the world we are privileged to see from above. Though we touch on a number of aviation's technical aspects in this airport-focused issue of *FAA Safety Briefing* magazine, I hope you will never lose the sense of adventure and discovery that is every aviator's birthright. And there is indeed much to discover and experience as you fly from airport to airport in this great country of ours, especially at the altitudes common to recreational general aviation (GA) flying.

Big World, Small World

It has been my privilege and pleasure over the years to see a lot of the world from the aviator's lofty vantage point. In my military flying days, I was fortunate enough to see sights that both exemplify and reflect the beauty of planet Earth. I've flown over the stark and icy beauty of the polar ice cap, and seen the glimmering turquoise tides against the white sand beaches of the Bahamas. I will never forget the splendor of sunset over the Grand Canyon ... the glory of watching the Northern Lights ... the impossibly white sands of Arabia ... the lush inviting green of the Amazonian jungle ... the dusky swirl of a haboob ... the spectacle of a speeding comet making its way across the sky during an otherwise routine aerial refueling operation. Recalling such sights makes me marvel all over again about the way aviation packages time and distance to let us experience the grandeur of our world. Put another way, aviation has an amazing ability to show us how the world can be both impressively large and cozily small.

Closer to Home...

The same principle holds true for our own beautiful country. There is no better way to appreciate the majesty of America's natural splendor than from the cockpit of a GA airplane. And visiting as many of this country's airports as you can is a wonderful way to experience not only the range of beautiful sights, but also the fascinating diversity of the American people. As editor Susan Parson writes in "Venturing Further Afield" on page 8, you can start by taking a flying tour of the public-use airports in your home state. Whether or not your state has a formal airport visitation program, what better way to support aviation (our common passion) and airports (aviation's essential national resource) while also enhancing your aeronautical experience and skill? As you fly from airport to airport, you will see a lot, learn a lot, enjoy a lot, and meet a lot of fascinating people who share the passion for flight.

I hope you will never lose the sense of adventure and discovery that is every aviator's birthright.

And, in a time when our pilot population is shrinking, perhaps you can use an airport visitation project as a way to perpetuate and grow the aviation world itself. Imagine how effective it could be in helping you spark a friend's interest in flying. It could inspire a lapsed pilot to come back. Or, it could help you show a student pilot that the rewards of learning how to fly are worth the costs and challenges of flight training.

It's a beautiful world, and a beautiful country. Fly it, see it, and enjoy it!

ATIS

Aviation News Roundup

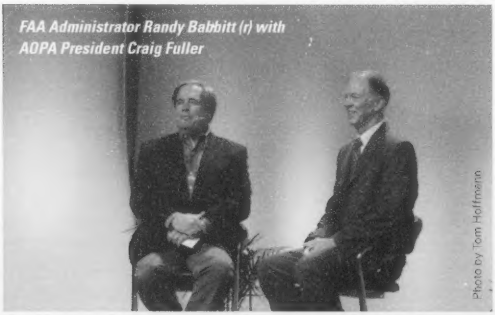
Hartford-Hosted AOPA Summit a Success

For three days in September (22–24), thousands of GA community members gathered in Hartford, Conn., to attend the 2011 AOPA Aviation Summit. As with previous summits, there were plenty of opportunities for anyone seeking education, information, and, of course, fun in all things aviation. The event included more than 400 exhibitor booths and dozens of safety seminars that covered everything from aeromedical issues to using iPads in the cockpit. *FAA Safety Briefing* editor Susan Parson also presented her Pinch-Hitter seminar on each day of the event.

Just a short ride from the Summit's main setup at the Hartford Convention Center, Hartford Brainard Airport (KHFD) hosted AirportFest, a static display of more than 100 aircraft and product displays. And despite the mostly soggy conditions, the AirportFest mainstage was also host to several musical performances and special events.

Among the Aviation Summit's keynote speakers was FAA Administrator Randy Babbitt who announced the establishment of a new Aviation Rulemaking Committee (ARC) designed to address pilot training and testing standards. More information on the ARC can be found in this issue's "Angle of Attack" department on page 33.

If you were unable to make the Aviation Summit in person, many of the segments were recorded and are available on the AOPA Live website at www.aopa.org/aopalive/..



FAA Administrator Randy Babbitt (r) with AOPA President Craig Fuller

Photo by Tom Hoffmann

Next year, AOPA Aviation Summit heads to Palm Springs, Calif., Oct. 11–13, 2012.

Flight Instructor Training AC Finalized

In September, the FAA issued a revised Advisory Circular (AC 61-83G), which provides information for the preparation and approval of training course outlines (TCO) for FAA-approved industry-conducted flight instructor refresher courses (FIRC).

The AC represents a collaborative effort between the FAA, flight training providers, and several industry partners. At the heart of the AC is a new set of core topics (listed in the appendix) that gives training providers added latitude and flexibility in how FIRCs are developed. The AC also helps to better emphasize the educational and professional value of FIRCs, and the important role they play in exposing the instructor to the latest flight training techniques, technology, and safety procedures.

The FAA's Flight Instructor Refresher Program was started in 1965 to keep flight instructors informed of the changing world of general aviation flight training, and to enhance aviation safety through continued refresher training. These industry-conducted training courses are one of several methods by which a flight instructor may renew his or her flight instructor certificate.

To view the AC, go to www.faa.gov/regulations_policies/advisory_circulars and search AC 61-83G..

FAA Seeks Improvements with New "ARC-itecture"

Aviation rulemaking committees (ARCs) recently established by the FAA aim to bring together government and industry partners to tackle several important GA issues. First is the ARC formed in August to help overhaul 14 CFR part 23 rules that pertain to the certification and manufacture of most GA aircraft. Over the past two decades, the shift in complexity towards complex, high-performance airplanes has placed an increasing burden on simple airplane certification and has contributed to a decline of new entry-level products. Meetings with the public and industry stakeholders validated these concerns and indicated a need for

reorganization of the rules to better align production requirements with safety risks, which, for simple and proven airplane designs, are typically low. Specific recommendations addressed the ability to make it easier to install more modern avionics as well as install safety-enhancing equipment in older airplanes, like ballistic parachutes and inflatable restraints.

One of the ARC's primary tasks will be to look at ways to base part 23 rules on airplane performance and complexity versus the existing weight and propulsion divisions. The group will also look at ways to categorize certification requirements using a system of tiers. The first tier would contain the requirements for low-complexity, low-performance airplanes and act as the basic starting point for all other categories. This simple product category would naturally fall into a lower oversight risk category, which in addition to lowering cost barriers for manufacturers, would allow the FAA to focus more on the complex, higher performance tiers. This level of flexibility would also help to simplify the certification process for future aircraft designs going forward.

The ARC, consisting of several FAA personnel, aviation associations, and part 23 airplane and equipment manufacturers, has started work on its recommendations and is expected to submit a detailed report in late 2012.

Another rulemaking committee being established will provide a discussion forum for issues concerning the FAA's Living History Flight Experience (LHFE) policy. The LHFE policy came about in the 1990s as a way to help owners/operators of historically significant aircraft offset their high maintenance and operation costs by allowing passenger-carrying flights for compensation. The intention of the policy was to help these historic aircraft stay operational and therefore preserve an important part of U.S. aviation history.

However, over the years several issues have to come to light regarding LHFEs, including airworthiness and maintenance concerns as well as a number of exemption requests that have asked the FAA to go beyond the scope of its policy. In light of that, this ARC will review the LHFE policy and provide expert advice and recommendations for revision and/or future rulemaking. The ARC will be represented by an assortment of FAA officials, industry associations, and LHFE exemption holders. Stay tuned for updates and more information.

GA Airports: An ASSET to Aviation

There are approximately 2,900 general aviation airports in the U.S., all of which are included in the national airport plan and play an important role in the National Airspace System (NAS). However, with nothing more than the term "general aviation" to describe these airports, it becomes difficult to assess the unique values and resources they possess. That's why the FAA began a top-down look at the current general aviation airport system in the U.S. to better describe and explain the many roles and functions these airports serve in their respective communities and in the national system overall.

Photo by James Williams

An FAA study will provide a better description of the many roles and functions of GA airports.

Known as the Airport System Strategic Evaluation Task (ASSET), the FAA study has gathered extensive data on airport activity (e.g., takeoffs, landings, IFR operations), current infrastructure (e.g., available Avgas, emergency equipment) and other factors. Special usage roles are also being considered, such as firefighting services, mail delivery, rescue operations, and law enforcement.

The FAA is working closely with aviation industry stakeholders, including associations, state aeronautical agencies, airport directors, airport authorities, airport planners, local councils of governments, and aviation user groups to identify the role GA airports support. These stakeholders agree that more descriptive categories are needed in order to help the general public understand the importance of these airports and their capital investment needs.

According to the FAA's Director of the Office of Airport Planning and Programming Benito DeLeon, the FAA has identified five preliminary roles for non-primary airports that will help better define and describe their function in the NAS. "Today, all these airports fall in the same bucket," says DeLeon. "By breaking them out into these five categories, both the general public and NAS users will be able to zero in on the specific roles each airport provides as well as help us assess what's needed for them to continue to serve that role."

The list of new classifications, along with full details on the study, will be published in a report expected in January 2012.

SUSAN PARSON

So, what is Part 139?

How a Part 139 Airport Gets Certificated

You are probably familiar with the regulations pertaining to airman training and certification (14 CFR part 61) and flight operations (14 CFR part 91), but did you know that there is also a set of regulations for airports? That would be 14 CFR part 139, which outlines the standards for certification of the approximately 550 U.S. airports with commercial passenger service. Specifically, airports that host scheduled passenger-carrying operations using aircraft originally designed with more than nine passenger seats, or an unscheduled passenger-carrying operation using an aircraft originally designed with more than 30 passenger seats, must be certificated under part 139.

So what does an airport have to do to meet the standards of part 139? First, a part 139 airport must have an FAA-approved Airport Certification Manual, or ACM, that includes all items specified under section 139.203. These include self-inspection procedures, procedures to ensure safety during construction, and procedures for controlling pedestrians and vehicles in the movement area. Part 139 also outlines requirements for airport rescue and firefighting, emergency plans, and, where appropriate, a snow and ice control plan. Also, unlike many non-certificated airports that simply broadcast messages warning pilots of "deer and waterfowl in the vicinity of the airport," many part 139 airports must also have a wildlife hazard management plan. In addition to these plans, the part 139 certification process ensures that the airport has standardized runway safety areas, that it conforms to stringent lighting and marking standards, and that airport personnel receive proper training in airport operations.

Just as the FAA's Flight Standards Service deploys aviation safety inspectors to oversee compliance with standards for pilots and flight operations, the FAA's Airports Division employs a small, but very dedicated, staff of airport certification safety inspectors. Their work includes conducting annual inspections of each airport certified under 14 CFR 139. To call these employees "dedicated" is not simply a phrase. During the recent congressional funding lapse that furloughed nearly 4,000 FAA employees, including almost the entire staff of the FAA's Airports Division, a number of the FAA's airport certification safety inspectors remained on the job to ensure the continued operational safety of the nation's part 139 certificated airports.

As described in detail elsewhere in this issue of *FAA Safety Briefing*, the FAA's Airports Division also conducts extensive ongoing research to identify and deploy new technologies that will improve safety. These include enhanced markings, runway status lights, advanced radar systems, and Engineered Materials Arresting Systems (EMAS). EMAS is a true "good news" story because the EMAS system has arrested many aircraft from overrunning the runway, and is credited with saving lives.

What About the Rest?

As you may know, there are nearly 20,000 landing facilities in the United States, of which more than 5,000 are public-use airports. So what about airports whose operations do not require certification and inspection under part 139? Because they receive federal funding, many of the non-certificated airports that serve general aviation conform to grant assurances prescribed by the FAA for safety and environmental compliance. Also, local governments have responsibility for inspection and oversight of non-part 139 airports.

To learn more, please visit the Airports section of the FAA Web site: http://www.faa.gov/airports_airtraffic/airports/airport_safety/part139_cert/, and also see Mike Brown's "The Part 139 Advantage" in the November/December 2008 issue of *FAA Aviation News* (www.faa.gov/news/safety_briefing/2008/media/novdec2008.pdf)

Susan Parson is a Special Assistant in the FAA's Flight Standards Service and editor of FAA Safety Briefing. *She is an active general aviation pilot and flight instructor.*

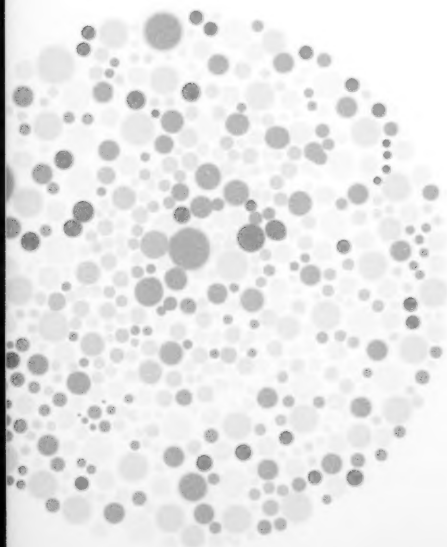
FREDERICK E. TILTON, M.D.
FEDERAL AIR SURGEON

Aeromedical Advisory

Colors of the Rainbow

Most of us take vision—including our ability to see colors—for granted. As you might remember from ground school, the retina holds two kinds of photoreceptor cells: rods and cones. The rods are highly sensitive to light so they help a person see in dim light situations but they cannot differentiate between colors. Three types of cones (red, blue, and green) provide the ability to perceive color.

The condition commonly called "color blindness," more accurately known as color vision deficiency, is usually an inherited condition caused by a defect in one or more of the cones, and it occurs more commonly in males. However, some pathological conditions can also affect a person's ability to see color.



Shades of Color Vision

There are several types of color vision deficiency, and complete color vision deficiency is quite rare. Partial color blindness can be divided into two types: red-green and blue-yellow. Red-green deficiencies are caused by a lack of either red or green cones. Blue-yellow deficiencies are caused by missing or defective blue cones. They are far less common, and they tend to have less impact on an individual's everyday life.

Because a pilot's world is involved with reds and greens, especially when it comes to night flying, evaluation of an individual's color vision is a required part of the aviation medical exam. Color vision deficiency is a problem, but it is not necessarily the end of the road for an aspiring aviator.

Color vision deficiency is a problem, but it is not necessarily the end of the road for an aspiring aviator.

An airman suffering from some forms of color vision deficiency may still be eligible for an unrestricted medical certificate if he or she can pass an operational test. For others, however, it may result in a limitation stating that the certificate is "not valid for night flying or by color signal control." So, if a person fails to pass the color vision part of their medical examination while in their AME's office, he or she can appeal to the FAA for additional operational testing. The FAA will work with the airman to determine the extent of the airman's capabilities in color-dependent situations. If the airman successfully completes this evaluation, the FAA will issue a Letter of Evidence (LOE) that modifies or removes the limitation.

Wishing you good health, safe flying, and happy holidays!

Frederick E. Tilton, M.D., M.P.H., received both an M.S. and an M.D. degree from the University of New Mexico and an M.P.H. from the University of Texas. During a 26-year career with the U.S. Air Force, Dr. Tilton logged more than 4,000 hours as a command pilot and senior flight surgeon flying a variety of aircraft. He currently flies the Cessna Citation 560 XL.

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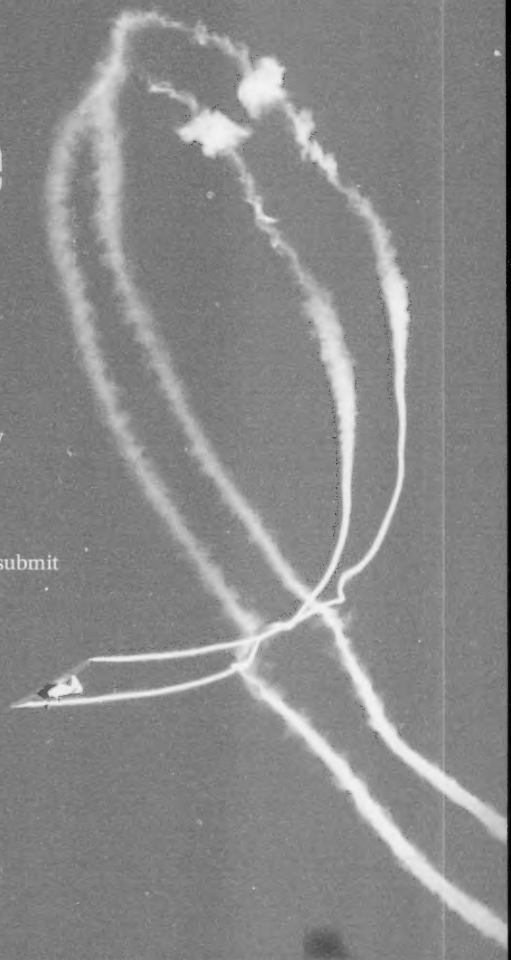
With FAA MedXPress, you can get your medical certificate faster than ever before.

Here's how: Before your appointment with your Aviation Medical Examiner (AME) simply go online to FAA MedXPress at https://medxpress.faa.gov/ and electronically complete FAA Form 8500-8. Information entered into MedXPress is immediately transmitted to the FAA and forwarded to your AME before your medical examination.

With this online option you can complete FAA Form 8500-8 in the privacy and comfort of your home and submit it before your appointment.

The service is free and can be found at:

https://medxpress.faa.gov/



DR. WARREN S. SILBERMAN

Ask Medical Certification

Dr. Warren S. Silberman and his staff administer the aeromedical certification program for about 600,000 holders of U.S. pilot certificates and process 450,000 medical certification applications each year.

Q: I have been diagnosed with epilepsy (grand mal or clonic-tonic). My last episode was in August 1992. What obstacles would I face if I pursued a pilot's license?

A: The FAA's policy for epilepsy is that you must be seizure-free for ten years and off all anti-seizure medications for three consecutive years. You will need to provide us with a good report that relates your entire history of epilepsy. It should include a description of the seizure, the treatments you were given, exactly when the last seizure you had occurred, the date when the medication was discontinued, and a current sleep-deprived electroencephalogram (EEG)—a test that measures and records the electrical activity of your brain. We may request other evaluations and testing depending on your history.

Q: I hold a third-class medical and have hypertensive issues that have been well controlled with medication for years. My doctor has advised me that I need to change medications. The new medication is on the approved list for the FAA. I plan to stop flying during the first few weeks of changing medication to ensure that I am stable and have no side effects. My letter from the FAA states that I don't need to contact the FAA until renewal of my third-class medical. Does a medication change require me to contact them sooner?

A: High blood pressure is one of the conditions for which the FAA allows your local aviation medical examiner to issue you a medical certificate, providing you provide your AME with the required information at each examination. If you have checked and the medication is acceptable to the FAA, then you do not need to notify us until the next examination. It is wise not to fly for one to two weeks while your body adjusts to the medication and to see if you are going to have any side effects.

Q: I got a DUI in the state of Pennsylvania in the early 1990s. I took advantage of the state's program for those with no former arrest or conviction, which included classes and a short license suspension. Later the charges and all records were officially expunged. I became a pilot in the early 2000s. Even though the records were expunged, my AME still recommended that I answer "yes" on the aviation medical form question on this topic. Is that correct?

A: Because you have been responding "yes" to that question, you should not change your future responses to "no." In our current computer system, if an airman changes the response to a question on the medical history section, it will trigger that exam to "reject" for review by one of our quality assurance examiners. Question 18v is a very sensitive question for the FAA's Aeromedical Division. It is one of the ways that we use to determine if an airman may have a substance abuse or dependence problem. I always tell airmen that the "truth shall set you free." It is much better to be completely truthful on your FAA medical examinations; anything less could jeopardize your medical certification. Remember, though, that if you develop a medical issue and you provide the FAA with the proper medical evaluations or testing, you will very likely be able to get medically certificated even if it takes some time to work through the process.

Warren S. Silberman, D.O., M.P.H., manager of FAA's Aerospace Medical Certification Division, joined FAA in 1997 after a career in the U.S. Army Medical Corps. Dr. Silberman is Board Certified in Internal Medical and Preventive/Aerospace Medicine. A private pilot with instrument and multi-engine ratings, he holds a third-class medical certificate.

VENTURING FURTHER AFIELD

USING AIRPORT VISITS TO EXPAND YOUR AVIATION EXPERIENCE

SUSAN PARSON

Photo by Susan Parson

"You want me to land *here*?!"

My client's incredulous query instantly brought to mind the nearly identical — and equally incredulous — question I had posed to my own flight instructor some years ago. In both instances, the prompting event was the instructor's request for a landing on a runway that, by comparison to the generous length and width of pavement at the home 'drome, seemed impossibly short and narrow.

A frequent focus of this magazine is proficiency. The lesson, first for me and later for my client, was that runways, and airports, come in many sizes. It pays to be proficient in landing at the smaller ones, and operating safely in the larger and more congested ones. Apart from the benefit such practice offers as preparation for emergency situations, it enhances your skill and comfort level for operations into the unfamiliar fields you inevitably encounter when using your pilot certificate for recreational or business travel.

An Airport Tour

Wondering how to go about it? If you have worked on an instrument rating, you will know that one of the aeronautical experience requirements is to log at least 50 hours of cross-country flight time as pilot-in-command (PIC), or equivalent time. I admit that I initially chafed at that requirement because I just wanted to get on with my flight training plans. Lacking a mentor to guide me (see "What Do I Do Now?" in the July/August 2011 issue of *FAA Safety Briefing*), I also found the project of accumulating 50 cross-country hours a bit daunting. My beginner's approach was therefore a simple one: I took a sectional chart, drew circles with 50 and 100 nautical mile radii, and made a list of all the airports that landed (so to speak) in the more-than-50-but-less-than-100 nm zone.

I freely admit that I was wrong to balk at the 50-hour cross-country requirement. It was not long before I realized that many educational and proficiency benefits accrue from flying to unfamiliar airports. Though I had flown to a few of the fields on my list in the course of training for my private pilot certificate, most were new territory.

The same was true when I participated more recently in Virginia's Aviation Ambassadors Program (*see sidebar*), which cleverly promotes aviation and the state's 66 public-use airports by using an awards program to encourage pilots and other aviation enthusiasts to visit each one. Here are just a few of the great lessons learned from my airport visitation experiences.

Plans

You know the cliché exhorting us to plan the flight, and then fly the plan. Though I didn't exactly need a stone tablet and chisel before today's smartphones and tablet apps so greatly simplified the flight planning process, I did do a lot of what today's pilots politely call "manual flight planning." It was tedious at times; still, the repeated drill of drawing and measuring the course line, calculating performance, evaluating weather/NOTAMs, and consulting the trusty green *Airport/Facility Directory* (A/FD) for the target airport's vital statistics did a lot to reinforce — and solidify — the fundamental flight planning skills acquired in private pilot ground school. And, in the days before GPS moving map navigators became ubiquitous, the process of flying to so many unfamiliar airports notched up those fundamental navigational skills of pilotage, dead-reckoning, and VOR intercepts and tracking.

In addition to the lessons learned from planning the flight and flying the plan, an equally important lesson from my airport tours was the experience gained from changing the plan on the fly as needed for weather and the range of operational issues that can arise. For example:

It pays to be proficient in landing at smaller airports, and operating safely in the larger and more congested ones.

- A trip to a smaller airport on a typical summer day in the mid-Atlantic region gave me a whole new appreciation for the challenge of spotting an unfamiliar airport in the thick afternoon haze. I also learned firsthand what 3-to-5-mile visibility looks like.
- On a flight to an air carrier airport in Class C airspace, the controller abruptly cancelled my landing clearance and turned me away from the airport to allow an MD-80 airliner to zoom past. The inevitable "caution, wake turbulence" instruction that followed was a powerful incentive to remember all the wake turbulence avoidance procedures from ground school. And then came the challenges of a last-minute runway change, followed by navigating the concrete maze on the ground — so very different from the single-runway simplicity of my home airport. I did not hesitate to request progressive

An aerial view of Salisbury-Ocean City Wicomico Regional Airport (KSBY)

Photo by Susan Parson

taxi instructions from the friendly ground controller; better for both of us to avoid my becoming a runway incursion statistic.

- A mountain-surrounded airport I visited on another hot summer day reinforced lessons about density altitude. Because its runway was also shorter than the one at my home base, that airport also provided a good reminder of how important practical performance calculations are to safe operations.

People (and Pets)

One of the best, and most unexpected, benefits of venturing to different airports was the opportunity to meet such a variety of airport people. Like the airports themselves, airplane junkies come in many shapes and sizes. The one thing they typically have in common is an outsized enthusiasm for aviation, airplanes, and fellow aviators. Friendly faces prevailed at even the bigger airports, but what fun to meet so many people whose idea of weekend fun includes hanging out at the local airport. Especially during my quest to achieve status as a Virginia Aviation Ambassador, these kind souls invariably offered both encouragement and education on local flying conditions and quirks. There was also plenty of education and entertainment from the quirks of the people themselves. I especially remember a small airport whose charmingly eccentric operator kept a prepared lunch — complete with homemade ice cream and a trove of "there-I-was" hangar flying stories — on hand every weekend for anybody who happened to stop by. Another airport operator made a point of photographing each visiting plane and pilot as part of his comprehensive airport history project.

And then there are the airport pets. I've met a few airport cats, but I've lost count of the number of airport dogs who have offered a welcome waggin' to itinerant pilots.

And then there are the airport pets. I've met a few airport cats, but I've lost count of the number of airport dogs who have offered a welcome waggin' to itinerant pilots.

Places

Just as pet owners know that no two dogs have the same personality, plane people know that no two airports are truly the same. The larger air carrier airports are an amazing and meticulously organized maze of heavily painted concrete with multi-colored lights and signs. (*For a review of basic airport anatomy, see Tom Hoffmann's "How a Runway Earns Its Stripes" on page 12 of this issue.*) Smaller airports can have some of everything — which is why it pays to consult the A/FD before you launch. During the VA Aviation Ambassador trips, for instance, my flying companions and I experienced everything from bowl-like runways with a noticeable dip in the middle to basic mountain-top strips (e.g., KGDY) to ski-slope runways with unidirectional takeoff and landing requirements.

And don't forget to check for airport amenities. Though few general aviation airports could compete with the mall-like "shopportunities" that abound nowadays in major airports, you will find a wide range of pilot shops and, better yet, aviation-themed

restaurants that contribute to an airport's unique character. A few airports also host aviation history museums.

Planes

Speaking of museums ... for those who participate in the sport of plane-spotting, what better way to feed the habit than to visit new airports? Even without a museum on site, airports are a great place for aviation enthusiasts to see a wide variety of aircraft types. I've stumbled upon warbirds, an astonishing variety of experimental/amateur-built planes and, best of all, a number of old friends. I was delighted, for instance, to see the C150 once owned by my flying club on the ramp at its new home base in Delaware. I've sighted several of the steeds I flew in primary training days at airports around the mid-Atlantic. And, since learning the significance of the late 1990s-vintage C172 *Skyhawks* with the "ES" tail number (see "The Legacy of Echo Sierra" in the January/February 2010 issue of *FAA Aviation News*), I have enjoyed looking for those airplanes around the country.

A More Creative Approach

The bottom line: a pilot proficiency plan based on visiting a range of airports offers a number of aviation educational and enjoyment opportunities with the added benefit that it can help support our country's vital network of general aviation airports. If your state has a formal airport visitation program, sign up - and let us hear from you, so we can publish a list of such programs in a future issue of *FAA Safety Briefing*. No problem if there is no program, though — your state's aviation department can likely offer a list of its public-use airports, and many states also publish a state-specific aeronautical chart. Also, your inquiry — or suggestion! — might prompt someone in your state to establish its own airport visitation program.

If you are an instructor or flight school operator, an airport visitation program is a great way to put scenario-based training into practice. Those in states with an airport visitation program could enhance the student's training experience by using it for both dual and solo cross-country flights. It also offers an incentive for structured "post-graduate" flying, both for proficiency and for earning higher certificates and ratings. If your state lacks a formal program, why not create your own? Your local GA airports will appreciate your support, and there is no limit to how much you can learn and enjoy in the process.

Susan Parson is a Special Assistant in the FAA's Flight Standards Service and editor of FAA Safety Briefing. *She is an active general aviation pilot and flight instructor.*

States Encourage Airport Visitation

At least two states in the mid-Atlantic region have established formal airport visitation programs.

In Virginia, the Virginia Department of Aviation's Aviation Ambassadors Program is designed to encourage pilots to visit all of the state's 66 public-use airports as well as visit aviation museums and attend safety seminars. As noted on Virginia's website description, the program lets pilots and aviation enthusiasts see the valuable asset provided by the state's airport system and learn more about the Commonwealth of Virginia. The Virginia Aviation Ambassadors Program provides Bronze, Silver, and Gold level recognition for pilots and passengers who visit (via flying or driving) Virginia airports and aviation museums, participate in one of the DOAV/FAA safety programs, and attend the Virginia Regional Festival of Flight. For more information, see: http://www.doav.virginia.gov/vaap.htm

In Maryland, the Maryland Airport Managers Association has just established its "Explore Maryland by Air Program." Similar to the structure of the Virginia Department of Aviation's program, Maryland's activity provides Fledgling, Albatross, and Ace levels of recognition for pilots and passengers who visit its 36 public-use airports, its aviation museums, and participate in one or more FAA safety programs. For more information, see: http://www.marylandairportmanagers.org/explore-maryland-air

Does your state have an established airport visitation program? If so, let us hear from you! Use your smartphone to scan the QR Code for a VFR-direct trip to our mailbox. We will gladly publish a list of state airport visitation programs in a future issue of *FAA Safety Briefing*.

TOM HOFFMANN

HOW A RUNWAY EARNS ITS STRIPES

Taking the mystery out of airport sign language

As a student pilot trainee at Long Island's Mac Arthur Airport (KISP) in Islip, NY, my introduction to navigating around an airport was eye-opening, to say the least. Besides reviewing my newly purchased Cessna 152 manual in the early days of my training, I was also instructed to become thoroughly familiar with the KISP airport diagram. The task seemed manageable, but on my first few flights I was more intent on listening for my call sign and straddling the yellow taxi line than trying to decipher the array of multi-colored lines, letters, and numbers all clamoring for my attention.

Thankfully, my instructor threw me a lifeline and spent time helping me make sense of the airport's sprawling expanse of taxiways, runways, and ramp areas. With four runways and air carrier jets taxiing to and fro, I quickly learned that KISP was no place to wind up somewhere you weren't supposed to be.

Despite that initial intimidation, I soon felt comfortable taxiing my way safely around the airport and was glad I invested extra time to learn the ins and outs of airport sign language. However, as I have learned after several periods of inactivity, keeping yourself up to snuff on airport signage shouldn't be limited to just your primary flight training days. With an average of three runway incursions (RI) each day in the United States, along with the occasional change to taxi clearances and airport markings, it's always a good idea to regularly review airport surface operations and regard them with the same importance as any other phase of flight.

Expect the Unexpected

With the excitement of the destination in your head, the chatter of anxious passengers, and the ubiquitous changes that crop up, it's understandable that pilots can become distracted and sometimes complacent during taxi. Throw in an unexpected taxi clearance, some marginal weather, and/or a heavy amount of aircraft activity, and you've got a recipe for a potentially deadly runway incursion on your hands.

Take, for example, the following narrative from the FAA's Daily Event Report on pilot deviations (PD) that shows just how close a disoriented Cessna came from being an accident statistic:

> *At Collin County Regional Airport (KTKI) in McKinney, TX, a Cessna 172 pilot was issued taxi instructions to Runway 35 via Taxiway Alpha which was read back correctly. The C172 taxied off the ramp, failed to make the turn southbound on Alpha, and taxied instead across Alpha. The Cessna then crossed the hold short line on Taxiway Delta for Runway 35 and came in conflict with another Cessna coming in for a touch and go on the same runway. In this case, the closest horizontal separation reported was less than 100 feet.*

The good news is that preparation and a solid knowledge of airport signage can significantly mitigate the risk in these types of situations—even at airports with more taxiways than letters in the alphabet. Although it may seem like there are an infinite number of differences between airports, you'll find that markings, signage, and lights are similar and standardized, and used even more consistently than the road signs you might see on your drive to the airport. And for those who may think you know all there is to know about signage and markings, I encourage you to read on. You'd be surprised to learn how a clear majority of RIs are caused by a simple mistake with the basics of airport navigation.

Crossing the Line

There are a series of different painted airport markings that can help pilots safely navigate and identify different elements of an airfield. Let's start with taxiways, which use a continuous yellow centerline stripe and may include edge markings. Double dashed edge markings mean a pilot can use that shoulder portion of the adjoining pavement (e.g. an apron), while a continuous double line defines a boundary that should not be crossed.

While taxiing, you may also encounter several types of hold short position markings, all of which deserve careful attention. The first is a taxiway holding position marking, which is a single dashed yellow line usually found before the intersection of another taxiway. ATC may direct you to hold short here depending on the amount of traffic at your airport. Another is the holding position markings for Instrument Landing System (ILS) critical areas, which resemble a horizontal ladder and span the width of the taxiway.

Then there is the runway holding position marking, which is by far one of the most critical markings on the airport. Sadly, however, it is also one of the most misunderstood and/or overlooked markings as indicated by their mention in hundreds of runway incursion reports each year. In fact, an FAA analysis of runway safety quiz scores administered during Flight Instructor Refresher Courses (FIRC) in 2010 showed only 66 percent of the quiz takers were able to correctly identify the hold short line marking. While the FAA's education campaign on hold short lines has successfully increased awareness of this critical marking in recent months, it remains an important focus item.

To review, a runway holding position marker is a combination of four yellow lines, two solid and two dashed. The dashed lines face the runway while the solid lines are on the taxiway side. When approaching the runway, do not cross the runway holding position marking without ATC clearance at a controlled airport, or without making sure of adequate separation from other aircraft at uncontrolled airports. A memory aid I've found helpful is to "stop for solid, dash through the dashes."

To further alert a pilot that he or she is approaching a runway safety area, all part 139 airports now use enhanced taxiway centerlines. These enhanced taxiway lines are dashed lines on either side of the centerline 150 feet from the holding position marking. (see Fig. 1) You may also see surface painted holding position markings with a red background and white inscription. These markings are designed to supplement the signs at a holding position and are usually found where the holding position on the taxiway is greater than 200 feet.

One final note on hold short lines: with intersecting runways at an airport, you may also see holding position markings on the runway when it is used for Land and Hold Short Operations or taxiing operations. If ATC clears you to a land on a runway without specific instructions to hold short of an intersecting runway, you are cleared to use the entire runway length and disregard any holding position markings on the runway.

Figure 1. As you can see here, the enhanced taxiway centerlines provide an important warning that you are approaching a holding position marking.

The More Paint, the More Precise

Once you cross onto the runway, several more markings can provide pilots with helpful information on runway size as well as what type of approaches are used. There are three types of markings for runways: visual, non-precision instrument, and precision instrument. Simply put, the more paint on the runway, the more precise operations you'll have. For instance, a basic VFR runway may only have centerline markings and runway numbers. Runways with a non-precision approach add on a threshold and aiming point markings, which are two white stripes 1,000 feet from the threshold that can serve as a helpful reference point for landing aircraft.

A precision instrument runway contains all the above, plus side stripes that delineate the edge of the runway, and touchdown zone markings, which are rectangular white bars that aid in instrument landings and are coded to provide distance information in 500 foot increments. See Fig. 2 for examples.

Beside helping identify the beginning of a runway that is available for landing, the long white threshold markings (depending on which of the two configurations is used) can also indicate to pilots the width of certain runways. One layout just uses eight parallel stripes, while the number of stripes used in the other corresponds directly with runway width. In this latter case, four stripes equals 60 feet, six stripes equals 75 feet, eight stripes is 100 feet, 12 stripes is 150 feet, and lastly, 16 stripes is used for a 200-foot wide runway.

It's also worth noting that because of an obstruction or construction near the end of a runway, a threshold may be relocated or displaced. When relocated, the threshold not only closes a set portion of the approach end, but also shortens the length of the opposite direction runway. A displaced threshold reduces the runway length available for landing, however, this area can be used for taxiing, takeoff, or landing rollout from the opposite direction.

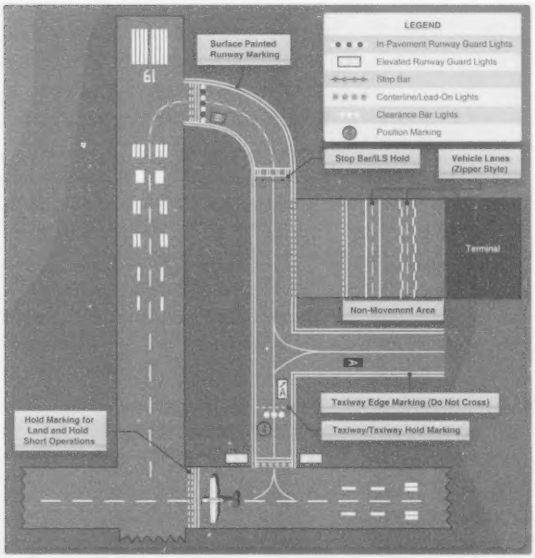


Figure 2. Airport runway and taxiway markings and surface lighting.

Here's Your Sign...

In conjunction with surface markings, there are six types of signs you'll find at an airport: mandatory, location, direction, destination, information, and runway distance remaining. Each plays a specific role in providing pilots and vehicle operators with the information and directions they need to safely navigate around an airport. Fig. 3 shows examples of each sign and their purpose.

A few helpful memory aids when it comes to deciphering signs include: "Black square, you're there" for a location sign, "Yellow array points the way" for a direction sign, and "Red and white, runway's in sight" for a runway holding position sign.

Lights, Please

A discussion about airport navigation wouldn't be complete without mentioning lighting. Similar to runway markings and signs, airport lighting systems depend on the volume and complexity of operations at a given airport. And, like signs and markings, airport lighting systems are standardized using similar colors.

Runway edge lights are white, except on instrument runways where they turn to yellow on the last 2,000 feet or half the runway length, whichever is less. Centerline lights alternate red and white starting 3,000 feet from the end, and are solid red starting 1,000 feet from the end. Taxiway edges are marked with blue lights or reflectors and some airports will have green taxiway centerline lights.

At a towered airport, ATC controls the lighting, whereas lights at a non-towered airport are controlled by a timer, or sometimes by the pilots by using the radio microphone. Keying the mike

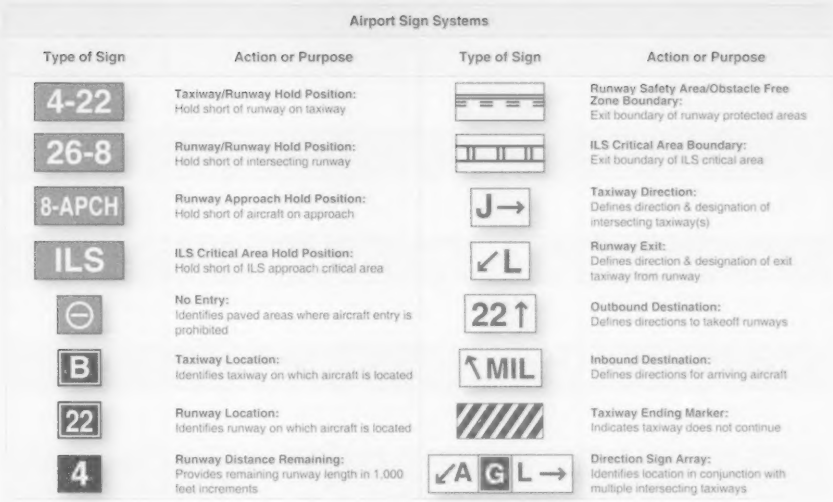


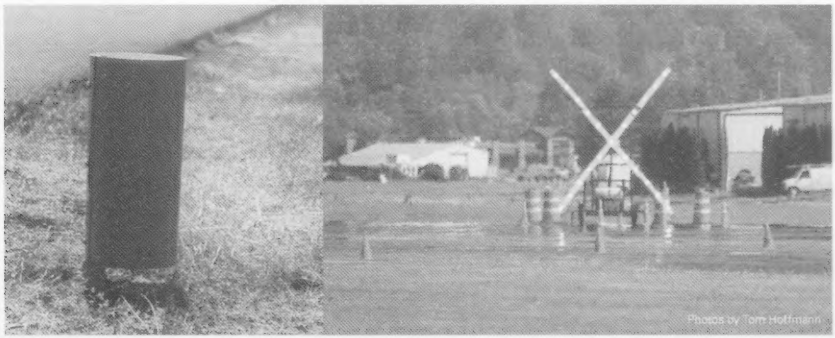
Figure 3. Airport signs

three, five, or seven times in five seconds will set the lights to low, medium, and high intensity respectively. Check the *Airport/Facility Directory* for more information about a particular airport's pilot-controlled lighting operations.

If available at your airport, be sure to also make use of any approach light systems, which besides providing IFR pilots a means to transition to visual flight, can also aid a VFR pilot on a day or night approach. Visual glidepath systems like the two-bar Visual Approach Slope Indicator (VASI) are among the most common. This system uses a pair of light bars (one near, one far) that change color according to the pilot's position on the glidepath. The easiest way to remember you're on glidepath is "red over white, you're alright." Another common glidepath system is the precision approach indicator, or PAPI. It's similar to VASI, except the lights are installed in a single row.

Show Me a Sign

Advances in new technology have greatly influenced the FAA's ability to develop safer and more efficient means of airport signage and lighting. While there has been considerable focus on many of the major part 139 airports, the FAA is also hard at



Taxiway edges are marked with blue lights or reflectors.

A raised-lighted "X" indicates a runway is temporarily closed.

work with efforts to advance safety at many smaller and predominantly GA airports. For example, a component of the Runway Status Lights system (a highly successful warning system that will be installed at 23 major airports by 2016) has been tested and used effectively at a smaller airport to help warn pilots when a runway is unsafe for landing.

Known as Final Approach Runway Occupancy Signal (FAROS), the system uses an inductive loop embedded in the runway asphalt that will flash the PAPI lights to warn pilots on approach that an aircraft has been detected on the surface. An advisory circular is underway with details on how this system may be applied in the near future at airports with medium to low traffic density.

Another area under review is the use of solar-powered and LED airport lighting. Due to their greatly reduced installation and maintenance costs, these technologies can provide opportunities for safe lighting at airports that would otherwise be inhibited by system complexity and cost. Solar-powered lights have already been tested at some airports in Alaska and a few states in the lower 48, and according to FAA Airport Safety Technology Manager Jim Patterson, have worked well in serving as a visual aid to pilots.

Did you know... the letters "I" and "O" are not used to designate taxiways because they could be mistaken for a runway number.

"Many remote airports do not have the money or the means to install lighting circuits used with traditional lights," explains Patterson. "As a result, pilots are often left without any visual aids."

A viable option for many remote airports is to install self-contained LED/solar fixtures, which provide an instant safety enhancement for users. To date, researchers have developed solar-powered LED systems to illuminate wind cones, elevated Runway Guard Lights (commonly referred to as Wig-Wags), and low intensity taxiway and runway lights. With initiatives to make our nation's airports more "green," the FAA is hopeful that this leading edge research will reduce an airport's carbon footprint and at the same time improve its safety.

Continuing Ed

Although technology is an important part of advancing runway safety, education awareness and outreach remain the cornerstone of promoting safe surface operations. In line with that education effort is a new pilot informational tool developed by the FAA's Office of Runway Safety: *Runway Safety — A Best Practices Guide to Operations and Communications*. The new guide contains dozens of helpful tips and images and is available on the FAA's Runway Safety website: www.faa.gov/go/runwaysafety. Also, a new chapter on preventing runway incursions is near completion and will be available in the next update to the *Pilot's Handbook of Aeronautical Knowledge*.

"Overall, it's a matter of raising the pilot's awareness of what he or she should be doing on the ground," says FAA Safety Engineer Chris Pokorski, who works in the Office of Runway Safety. "You're not flying per se, but you are flying the airplane on the ground and you have to be paying attention."

Tom Hoffmann is associate editor of FAA Safety Briefing. *He is a commercial pilot and holds an A&P certificate.*

Learn More

Advisory Circular (AC) 150-5340-1J — *Standards for Airport Markings*
www.faa.gov/airports/resources/advisory_circulars/index.cfm/go/document.current/documentNumber/150_5340-1

Advisory Circular (AC) 150-5340-18F — *Standards for Airport Sign Systems*
www.faa.gov/airports/resources/advisory_circulars/index.cfm/go/document.current/documentNumber/150_5340-18

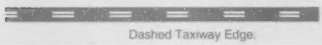
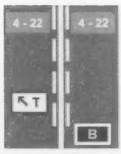
Aeronautical Information Manual (AIM) Chapter 2 — Aeronautical Lighting and Other Airport Visual Aids
www.faa.gov/air_traffic/publications/atpubs/aim/chap2toc.htm

AOPA Airport Signs and Marking Quiz
www.aopa.org/asf/asfquiz/2011/110826airportsigns/index.html

FAA Runway Safety Challenge
www.faa.gov/airports/runway_safety/eQuiz/

Airport sign and marking - Quick reference guide

Example	Type of sign	Purpose	Location/convention
	Mandatory: Hold position for taxiway/runway intersection	Denotes entrance to runway from a taxiway.	Located L side of taxiway within 10 feet of hold position markings.
	Mandatory: Holding position for runway/runway intersection	Denotes intersecting runway.	Located L side of runway prior to intersection, & R side if runway more than 150' wide, used as taxiway, or has "land & hold short" ops.
	Mandatory: Holding position for runway approach area	Denotes area to be protected for aircraft approaching or departing a runway.	Located on taxiways crossing thru runway approach areas where an aircraft would enter an RSA or apch/departure airspace.
	Mandatory: Holding position for ILS critical area/precision obstacle free zone	Denotes entrance to area to be protected for an ILS signal or approach airspace.	Located on twys where the twys enter the NAVAID critical area or where aircraft on taxiway would violate ILS apch airspace (including POFZ).
	Mandatory: No entry.	Denotes aircraft entry is prohibited.	Located on paved areas that aircraft should not enter.
	Taxiway Location.	Identifies taxiway on which the aircraft is located.	Located along taxiway by itself, as part of an array of taxiway direction signs, or combined with a runway/taxiway hold sign.
	Runway Location.	Identifies the runway on which the aircraft is located.	Normally located where the proximity of two rwys to one another could cause confusion.
	Runway Safety Area/OFZ and Runway Approach Area Boundary.	Identifies exit boundary for an RSA/OFZ or rwy approach.	Located on taxiways on back side of certain runway/taxiway holding position signs or runway approach area signs.
	ILS Critical Area/POFZ Boundary.	Identifies ILS critical area exit boundary.	Located on taxiways on back side of ILS critical area signs.
	Direction: Taxiway.	Defines designation/direction of intersecting taxiway(s).	Located on L side, priod to intersection, with an array L to R in clockwise manner.
	Runway Exit.	Defines designation/direction of exit taxiways from the rwy.	Located on same side of runway as exit, prior to exit.
	Outbound Destination.	Defines directions to take-off runway(s).	Located on taxi routes to runway(s). Never collocated or combined with other types of signs.
	Inbound Destination.	Defines directions to airport destinations for arriving aircraft.	Located on taxi routes to airport destinations. Never collocated or combined with other types of signs.
	Information.	Provides procedural or other specialized information.	Located along taxi routes or aircraft parking/staging areas. May not be lighted.
	Taxiway Ending Marker.	Indicates taxiway does not continue beyond intersection.	Installed at taxiway end or far side of intersection, if visual cues are inadequate.
	Distance Remaining.	Distance remaining info for take-off/landing.	Located along the sides of runways at 1000' increments.

Example	Type of marking	Purpose	Location convention
	Holding Position.	Denotes entrance to runway from a taxiway.	Located across centerline within 10 feet of hold sign on taxiways and on certain runways.
	ILS Critical Area/POFZ Boundary.	Denotes entrance to area to be protected for an ILS signal or approach airspace.	Located on twys where the twys enter the NAVAID critical area or where aircraft on taxiway would violate ILS apch airspace (including POFZ)
	Taxiway/Taxiway Holding Position.	Denotes location on taxiway or apron where aircraft hold short of another taxiway.	Used at ATCT airports where needed to hold traffic at a twy/twy intersection. Installed provides wing clearance.
	Non-Movement Area Boundary.	Delineates movement area under control of ATCT, from non-movement area.	Located on boundary between movement and non-movement area. Located to ensure wing clearance for taxiing aircraft.
	Taxiway Edge.	Defines edge of usable, full strength taxiway.	Located along twy edge where contiguous shoulder or other paved surface NOT intended for use by aircraft.
	Dashed Taxiway Edge.	Defines taxiway edge where adjoining pavement is usable.	Located along twy edge where contiguous paved surface or apron is intended for use by aircraft.
	Surface Painted Holding Position.	Denotes entrance to runway from a taxiway.	Supplements elevated holding position signs. Required where hold line exceeds 200'. Also useful at complex intersections.
	Enhanced Taxiway Centerline.	Provides visual cue to help identify location of hold position.	Taxiway centerlines are enhanced 150' prior to a runway holding position marking.
	Surface Painted Taxiway Direction.	Defines designation/direction of intersecting taxiway(s).	Located L side for turns to left. R side for turns to right. Installed prior to intersection.
	Surface Painted Taxiway Location.	Identifies taxiway on which the aircraft is located.	Located R side. Can be installed on L side if combined with surface painted hold sign.

JAMES WILLIAMS

More than Machinery

AN INSIDE LOOK AT AIRPORT APPROACH LOGISTICS

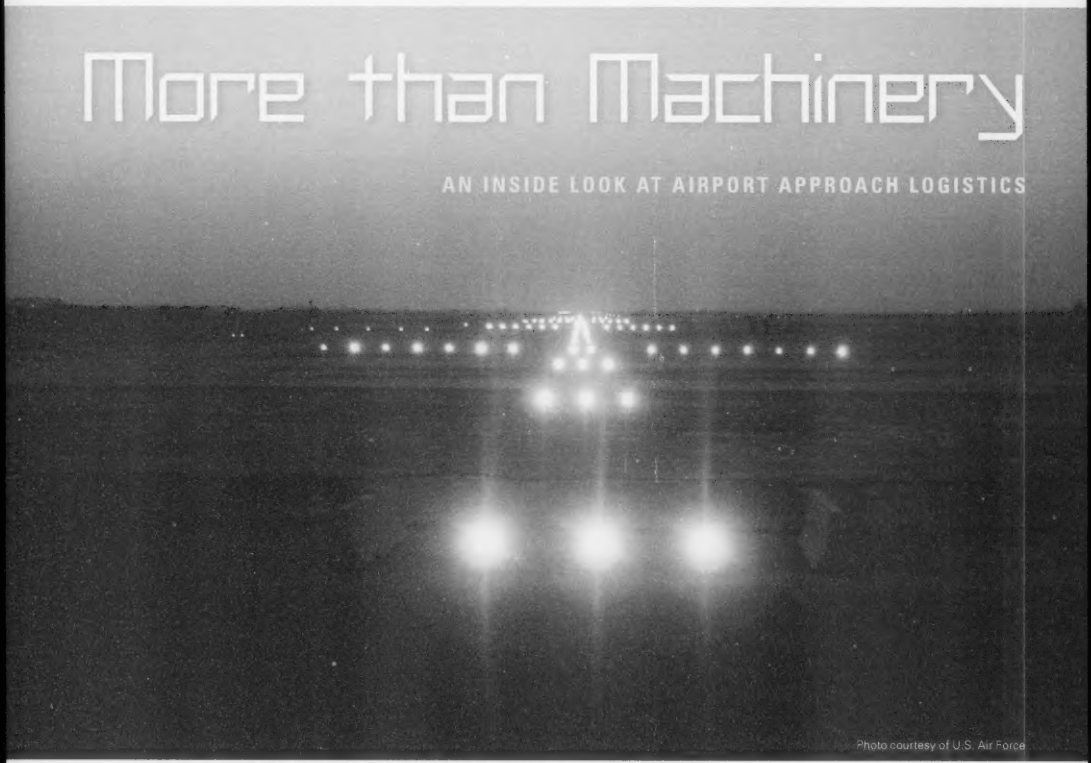


Photo courtesy of U.S. Air Force

"Why can't my airport have an LPV approach?"

Such is the common lament of instrument-rated pilots longing for more reliable all-weather access to their home airports. It was much easier to understand the answer to the previous question—"Why can't my airport have an ILS?" As most pilots realize, the cost of the equipment, its initial installation, and the pricey ongoing maintenance (including recurring certification) is too daunting for smaller airports to justify. But these new GPS-based approaches, like an LPV, are just lines on a chart, right? Sorry, but not quite.

So, what gives?

The FAA is committed to aggressively expanding the number of LPV approaches available, but there are real requirements behind those approaches. A quick look at Terminal Instrument Procedures (TERPS) will demonstrate that creating an instrument approach procedure (IAP) is far more complicated than simply sketching courses and altitudes on paper. In fact, the real challenge starts at the pavement.

The Runway Environment

The virtual lines on your approach plates require some physical ones on the runway. The runway

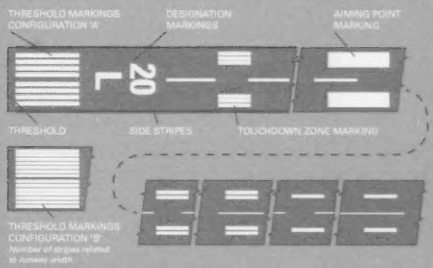
Localizer Performance with Vertical Guidance (LPV) approaches

A new class of approach procedures that provide vertical guidance, but without meeting ICAO Annex 10 requirements for precision approaches, has been developed to support satellite navigation use for aviation applications worldwide. These new procedures are categorized as Approach with Vertical Guidance (APV).

The LPV —localizer performance with vertical guidance — is the initial APV. The LPV approach takes advantage of the high accuracy guidance and increased integrity provided by the Wide Area Augmentation System (WAAS). WAAS-generated angular guidance allows the use of the same TERPS approach criteria used for ILS approaches. The resulting LPV approach procedure minima may have a decision altitude as low as 200 feet height above touchdown, with visibility minima as low as one-half mile when the terrain and airport infrastructure support the lowest minima. LPV minima are published on RNAV (GPS) approach charts.

The FAA has currently published 2,675 LPV approaches, more than 500 of which have a height above touchdown of 200 feet.

Precision Instrument Runway Markings



Nonprecision Instrument Runway Markings

Visual Runway Markings

marking elements vary, but the most basic paved GA runways are only required to carry their designation (i.e., runway number) and a centerline. To be eligible for a non-precision approach, the runway must have threshold and aiming point markings. Still more markings are prescribed for a precision approach, which requires touchdown zone and side stripe markings.

So, now our runway is appropriately striped. We're done, right? Not so fast.

The next step is for runway lighting and some type of approach lighting system, which are needed to allow round-the-clock use of the procedure and the lowest possible minimums. When it comes to approach lighting, the most extensive is the High Intensity Approach Lighting System with Sequenced Flashing Lights. This array consists of 247 steady lights of three different colors and 15 flashing lights, better known to pilots as "the rabbit." This system extends 2,400 feet from the end of the runway. The approach and runway lights provide pilots with visual information not only on runway alignment, but also on perception of height, roll, and horizontal reference.

Few GA airports can justify the high intensity array. A less costly system is the Medium

Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR). Because the MALSR is compatible with a decision height of 200 feet AGL, MALSR lights the runways at approximately 900 airports versus 155 times for its big brother. Incidentally, the FAA is testing an LED (Light-Emitting Diode) MALSR system to lower the maintenance cost of the system. A study determined that replacing all MALSR incandescent lamps with LEDs would pay for itself in two years.

Imagination, Please

With the runway properly marked and brightly lit, what else is required?

You might scoff at the use of the word "imaginary" in connection with something as serious as an instrument approach procedure. But Imaginary Surfaces play a big part in keeping airplanes safe from encroaching obstacles. Most pilots are familiar with 14 CFR parts 61 and 91 and, depending on their training and work environment, with parts 141, 135, or 121. 14 CFR part 77 is probably not on most pilots' reading lists. But that's where you will find the regulations covering obstructions to navigable airspace.

The FAA is committed to aggressively expanding the number of LPV approaches available, but there are real requirements behind those approaches.

Specifically, 14 CFR section 77.25 covers Civil Aviation Imaginary Surfaces. These surfaces protect the approach path and areas surrounding the airport. These surfaces are defined in depth in 14 CFR section 77.25, but the area of greatest relevance to this topic is the approach surface. For runways that enable nothing more than a visual approach, that surface can be as short as 1,250 feet. It grows to a length between 2,000 and 4,000 feet for a non-precision approach and to 16,000 feet for a precision approach. The expansion from roughly one-fourth of a statute mile to roughly three statute miles makes a huge difference in the amount of area that must be surveyed for potential obstacles. That's why the FAA recommends that airports survey for every potential type of IAP they might develop right from the start, so as to plan appropriately for future growth.

Who Pays, and Who Decides?

With so many (expensive) requirements, you might think things are just as hopeless for your GPS-based precision approach dreams as they were in the days when ILS was the best available.

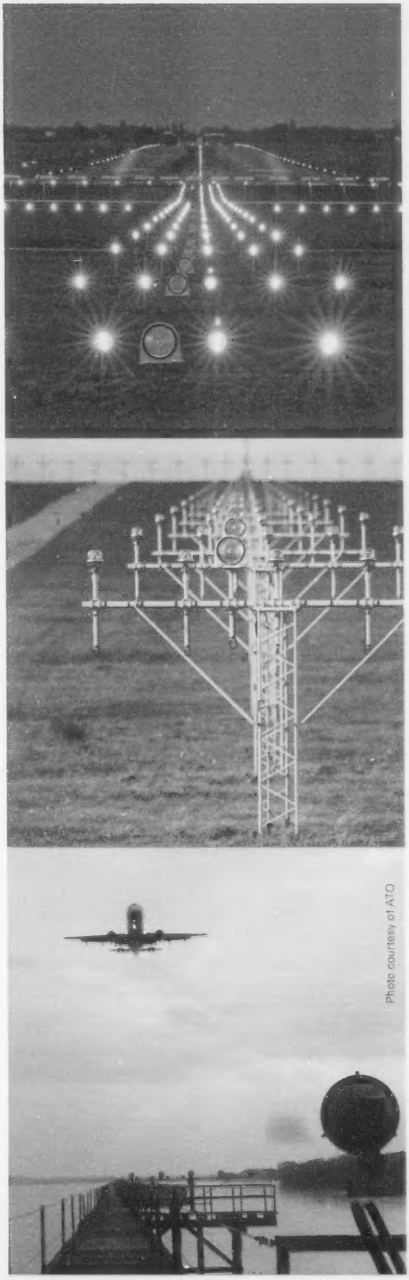


Photo courtesy of ATO

An example of a precision instrument approach runway

Photo by Raymond G. Stinchcomb

But, don't despair. Though complex, the process of developing a GPS-based approach is still much less onerous. Even better, the FAA has been pressing ahead to develop approaches for as many qualifying runway ends as possible. In the revision cycle ending August 25, 2011, the FAA published 148 new LPV approaches. That development brings the total number of LPV approaches to 2,675 nationwide. When combined with Localizer Performance Approaches (LPs), the total number of GPS-based procedures in the U.S. is now more than double the number of ILSs.

With respect to who pays, that's where the FAA comes in again. The FAA's Airport Improvement Program (AIP) allows public-use airports to apply for grants that can cover up to 95 percent of the costs of an airport improvement project. The grants can cover everything from planning and design, to lighting and weather stations — in short, anything that improves the airport's safety or efficiency.

If you're interested in exploring possibilities for a GPS-based IAP at your airport, the first step is to discuss the idea with airport management and your fellow airport users. Is the IAP right for you and the airport? Are you willing to accept the restrictions that come with an AIP grant (e.g., commitments to keep the airport open to the public and to prohibit discrimination against any potential safe users)? And, of course, it is necessary to determine whether the airport can qualify for an AIP grant. Lighting improvements and obstacle removal or mitigations would generally qualify for funding since both improve airport safety and efficiency in bad weather.

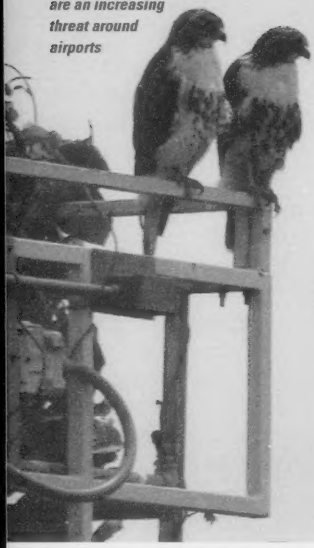
Though complex, the process of developing a GPS-based approach is still much less onerous than the task of fielding an ILS.

For more information on the AIP, please see: http://www.faa.gov/airports/aip/overview/. And to see if your airport is on the list for development of a GPS-based IAP, visit http://avnweb.jccbi.gov/schedule/production. If it is not on the list, then maybe it's time to start working with your fellow airport users to amend it and, ultimately, improve access to your home airport.

James Williams is FAA Safety Briefing's assistant editor and photo editor. He is also a pilot and ground instructor.

Learn More

AC 90-100A, U.S Terminal and En Route Area Navigation (RNAV) Operations
http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/list/AC%2090-100A/$FILE/AC%2090-100A.pdf



Red-tailed hawks are an increasing threat around airports

Splat

The Story of Snarge

"Accidental" Meetings Between Airplanes and Wildlife

Photo by John R. Weller

JAMES WILLIAMS

Snarge: (*snärj*) n. It's the word used for what is left of a bird after it strikes an aircraft. It's not pretty...and neither are the results of most bird collisions with aircraft, which seem to be increasingly common. Anecdotes abound. On a recent road trip with an old friend, who happens to be a regional jet captain, talk turned to hangar flying. "I seem to be having a lot of bird strikes lately," he said. In the wake of US Airways Flight 1549's miraculous landing in the Hudson River, public attention focused sharply on one of aviation's most chronic problems: wildlife strikes. As my friend reported, "One strike on landing was so bad we had to take the aircraft out of service and ferry it back to the manufacturer, unpressurized. The birds did enough damage to the pressure vessel that we didn't want to risk it."

That was a wise decision. During an accident investigation training course I attended a few months ago, instructors described a 2008 accident in Oklahoma. Two minutes after takeoff from Wiley Post Airport in Oklahoma City, a Cessna Citation entered a steep decent and crashed, killing all five on board. The National Transportation Safety Board (NTSB) determined that the cause of the accident was wing-structure damage from a bird strike, which resulted in loss of control.

A Growing Concern

Just how big is the problem?

"Wildlife strikes are probably the most pressing issue we face in the airports world," says Brian Rushforth, manager of the FAA's Airport Safety and Operations Division. Over the past 20 years, the problem of wildlife strikes has only gotten worse. According to the U. S. Department of Agriculture (USDA), 13 of the 14 largest bird species have shown significant population increases. These include Canada geese, white and brown pelicans, sandhill cranes, wild turkeys, and bald eagles. Populations of many other hazardous species, such as turkey vultures, snow geese, red-tailed hawks, ospreys, great blue herons, double-crested cormorants, and white-tailed deer also have increased dramatically. Adding to the challenge is the fact that most of these species have adapted to living in urban environments, including airports.

Experts put the total losses for wildlife strikes at $625 million per year in direct damage and associated costs, and over 600,000 hours of aircraft downtime. In an industry that runs on razor thin margins at virtually every level, those losses could be crippling. Financial losses pale in comparison with the loss of life that occurs in some wildlife strikes.

While birds make up 97 percent of those strikes, they aren't the only problem. Between 1990 and 2009, there were 964 reported deer strikes in the U.S. In 2009, there were 9,253 reported bird strikes. That works out to more than one strike per hour, every day of the year. And that's not counting the fact that experts believe that more than 60 percent of bird strikes go unreported.

"Although strike reporting has increased significantly during the last two decades, there are reporting gaps from certain airports and airlines that need to be filled," says FAA's National Wildlife Biologist John Weller. "Larger part 139 airports, and those with well-established wildlife hazard management programs, have reporting rates about four times higher than other part 139 airports."

"Furthermore," Weller says, "GA airports that are part of the National Plan of Integrated Airport Systems (NPIAS) comprise only 6 percent of the overall strikes reported into the database, yet have accounted for 67 percent of reported civil aircraft destroyed or damaged beyond repair due to wildlife strikes from 1990 to 2008."

"Despite reporting gaps, both the quality and quantity of strike reports being submitted have steadily increased," says Weller, "but we can still do better." Weller points out that species identification is only provided in about 45 percent of all reported strikes and that the estimated and/or actual cost of the strike event is typically not provided. According to Weller, both are "critical pieces to understanding a complicated puzzle."

Wildlife strikes are probably the most pressing issue we face in the airports world.

With this in mind, Rushforth has laid out steps that the FAA has taken to help improve the reporting process. "We've worked hard to make reporting a strike as easy as possible. We've got a website, and we have now made it possible for you to report

Exploding Canada geese populations have become a huge problem for airports

One mitigation strategy is to use tame natural predators for drive away threats.

Photo courtesy of U.S. Air Force

wildlife strikes directly from your smartphone. We are trying to get the word out to pilots as much as possible."

What Can I Do?

Anecdotes are not enough to get a handle on the true magnitude of the issue. As Rushforth observes, one of the biggest challenges that wildlife managers at airports face today is the lack of good data.

To improve that data, the FAA has worked to make reporting wildlife strikes much easier. Simply navigate to: http://wildlife.faa.gov and click "report a strike." As noted earlier, you can even do it from your smartphone.

The form also includes instructions for safely collecting remains whenever possible. Though admittedly distasteful, the remains are critical to helping airport wildlife managers create better mitigation strategies. These strategies differ according to species. For instance, the methods used to drive off a hawk are different from those that would be effective against a starling. As outlined on the website, the remains—generally feathers—should be sent to the Smithsonian, which provides identification services free of charge to U.S.-registered aircraft owners and operators. If feathers are not available, even a swab of the biological material (a.k.a. snarge) can help experts determine the species through DNA.

If we all pitch in and help improve the data, we can create safer skies through better mitigations.

James Williams is FAA Safety Briefing*'s assistant editor and photo editor. He is also a pilot and ground instructor.*

The FAA has made it possible to report wildlife strikes directly from your smartphone.

Learn More

Guidebook for Addressing Aircraft/Wildlife Hazards at GA Airports
http://onlinepubs.trb.org/onlinepubs/acrp/acrp_rpt_032.pd

SUSAN PARSON

Checklist

Going Green

"Have you checked the AF/D?"

My primary flight instructor and I were preparing to launch for my very first trip to another airport, and part of my preparatory homework assignment was his instruction to check "all available information" as required by the regulations (14 CFR 91.103).

As I had learned in ground school, the FAA's distinctive green-covered *Airport/Facility Directory* (A/FD) is the go-to source for some of the vital information I needed about my destination, Virginia's Winchester Regional Airport (KOKV). Published every 56 days in a seven-volume set, the A/FD provides data on all airports, seaplane bases, and heliports that are open to the public. It also includes information on joint-use military facilities and, where specifically requested by the Department of Defense (DOD), data on selected private-use airports.

For the flight from my home airport, Leesburg Executive (KJYO) to KOKV, the A/FD helpfully informed me that I could expect to find the Winchester Airport 3 miles southeast of the city. Supported by a simple but information-rich airport sketch, the text reported that KOKV's runway 14-32 is 5,498 feet long by 100 feet wide, and that the traffic pattern altitude is 1,706. I further found the frequencies I would need to get weather information and communicate my position on the common traffic advisory frequency (CTAF). When I trained later for night and instrument flying, I went to the A/FD for information on how to activate runway lighting, get an IFR clearance, recognize the runway lighting array, and tune the appropriate navigational aids (NAVAIDs).

With respect to NAVAIDs, that's the "facility" part of the publication's title. If you need the frequency of a very-high-frequency omnidirectional range (VOR) facility, you will find it listed alphabetically as a separate entry. Though somewhat less critical in the age of moving map GPS navigators that use latitude/longitude coordinates and satellites to find VOR facilities, the NAVAID entry also includes a list of unusable and/or unreliable radials.

But Wait — There's More!

Even if the A/FD contained just the above content, the FAA's little green book would be a golden resource. But there's a lot more material packed in. For instance, the A/FD includes airport elevation, hours of operation, types of fuel, and level of maintenance / repair facilities on site. On a cross-country flight from Virginia to Arizona several years ago, my flying companions and I consulted the A/FD to find an airport that could replenish our oxygen supply.

Other useful items include telephone numbers for the FAA, Flight Standards District Offices (FSDO), and air traffic control facilities in the region covered by each volume. Again on the trip to Arizona, my flying friends and I used this information to contact ATC about recommended or preferred routing for a trip that would take us through busy Class B airspace. And, speaking of preferred routes, one of the A/FD appendices offers a list of ATC-preferred routes and, where applicable, routing for tower en route control routes (TEC). Still more chart-related information is the A/FD's Aeronautical Chart Bulletin on mid-cycle changes to aeronautical sectional, terminal area, and helicopter route charts.

Learn More

To report A/FD errors or changes, go to:
9-ATOR-HQ-AIS-AIRPORTCHANGES@faa.gov

Digital Airport/Facility Directory website:
http://avn.faa.gov/index.asp?xr=1=aeronav/applications/d_afd

Go Green — Go Digital

Recognizing that many pilots increasingly prefer electronic data, the FAA has also made the A/FD available as a digital download in PDF format. The digital A/FD includes everything you find in the paper version, with the general information, directory legend, and supplemental information pages printed as multi-page PDF files. As the FAA website notes, there will be a time near the end of each 56-day airspace cycle in which both current and future editions of the digital A/FD are available. To facilitate finding the correct file, the hyperlinks include effective dates for each cycle.

Regardless of the format you choose, the A/FD is an invaluable resource for aviators. Don't leave the pattern without it!

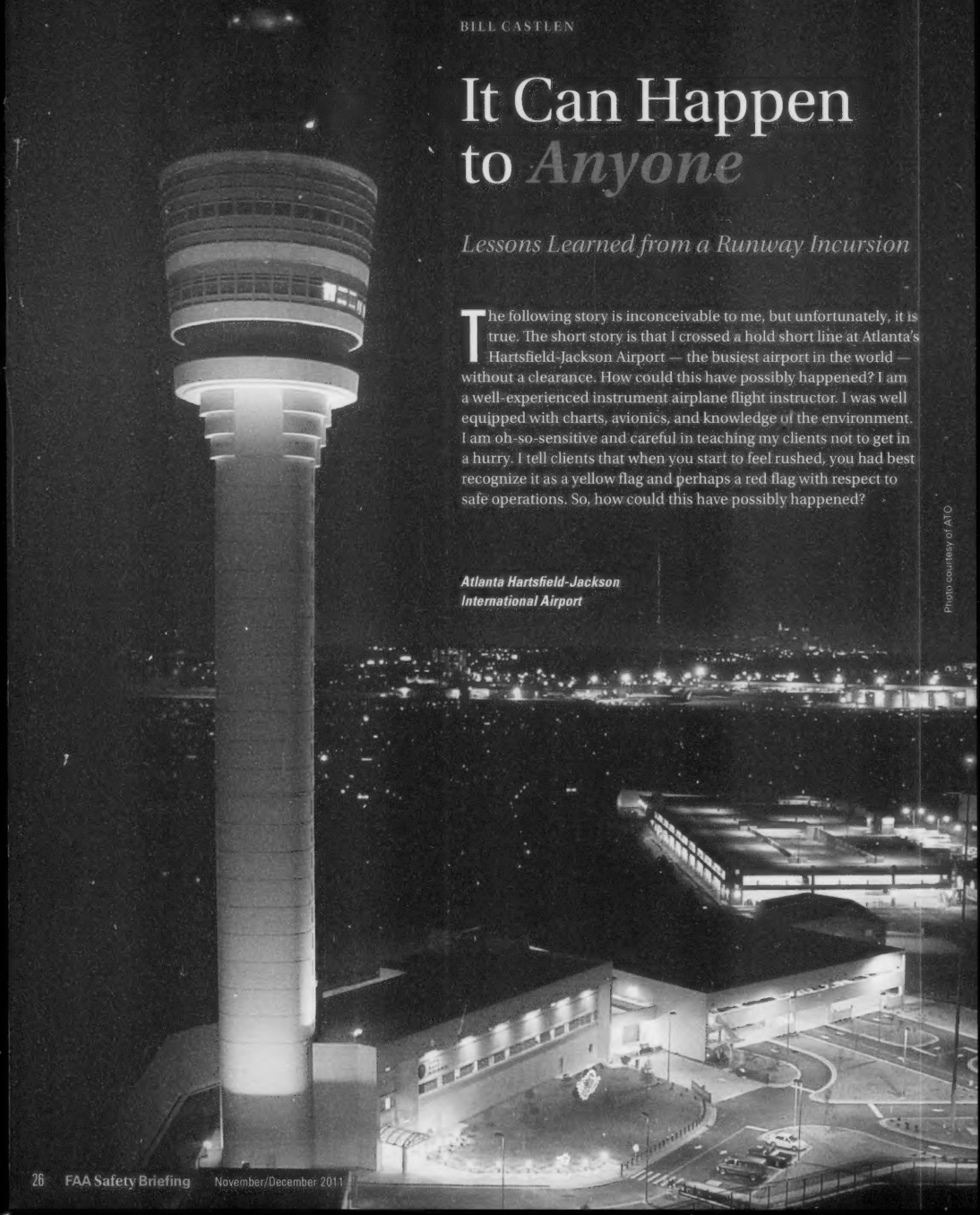
Susan Parson is a Special Assistant in the FAA's Flight Standards Service and editor of FAA Safety Briefing. *She is an active general aviation pilot and flight instructor.*

BILL CASTLEN

It Can Happen to *Anyone*

Lessons Learned from a Runway Incursion

The following story is inconceivable to me, but unfortunately, it is true. The short story is that I crossed a hold short line at Atlanta's Hartsfield-Jackson Airport — the busiest airport in the world — without a clearance. How could this have possibly happened? I am a well-experienced instrument airplane flight instructor. I was well equipped with charts, avionics, and knowledge of the environment. I am oh-so-sensitive and careful in teaching my clients not to get in a hurry. I tell clients that when you start to feel rushed, you had best recognize it as a yellow flag and perhaps a red flag with respect to safe operations. So, how could this have possibly happened?



Atlanta Hartsfield-Jackson International Airport

Photo courtesy of ATO

This story includes irony upon irony. I love to fly and I enjoy teaching flying and safe operations. Thus, I have a lot of fun doing what I do. I am an FAA Safety Team Representative, so I produce and present safety seminars under the auspices of the Birmingham FAA Flight Standards District Office. When the Society of Aviation and Flight Educators (SAFE) organized a symposium on the topic, "Securing the Future of General Aviation through Pilot Training Reform" to be held near KATL, I registered to attend and volunteered to assist. Because the symposium hotel is almost within walking distance of Atlanta's GA FBO, I decided to fly into ATL and save the cost of a rental car and have the fun of experiencing ATL activity.

Flying with the Big Guys

I started preparing for the trip several days in advance by reviewing the STARs, the IAPs, the DPs, and especially the airport diagram. I paid special attention to the latter and even used a yellow marker to highlight the four airport hot spots (HS) and I knew that I would certainly be taxiing through HS 1 and perhaps HS 2 and HS 4 also (see Fig. 1).

My arrival on Tuesday, May 3, was in visual meteorological conditions (VMC) and was totally not noteworthy to all, except me in the cockpit of a Cirrus SR-22. I was pumped! I quickly responded to all instructions from Atlanta Approach, followed them to the letter and then was handed off to Tower as I was turning final on the ILS 26R behind a B-737. I was cleared to land and cautioned for wake turbulence. I stayed precisely one dot high on the glideslope to avoid the 737's turbulence, kept my speed up until just short of the runway, touched down a little beyond the glideslope touchdown point, used light braking, turned off at Taxiway Dixie as I had anticipated and Tower had advised, and taxied to the ramp. After I cleared the runway, I looked back to see how close the following traffic was. It was an air carrier jet — I couldn't tell what model from the front — and he was just short of the threshold. I felt really good that I had been able to fit in with all the "Big Dogs" and be a good aviation citizen.

I spent Tuesday evening, Wednesday, Thursday, and Friday morning being a productive helper to all the very significant participants at this conference. By the time I left the hotel, about 10 a.m. on Friday, I again felt that I had succeeded in being a good aviation citizen. I had filed for an 11:15 a.m. departure and arrived at the FBO with plenty of time. I was totally relaxed and refreshed. What could go wrong?

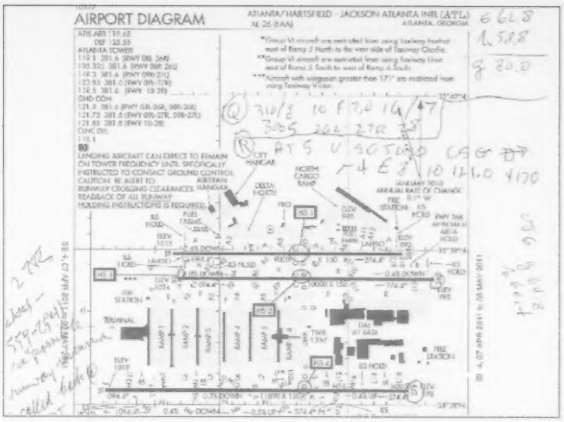


Figure 1. I had made a lot of notes on the Airport Diagram that I had in my lap.

I checked the ATIS: "Information Q, wind 310/8 visibility 10 few at 7,000, temp 16, DP 7, altimeter 3005 departing runways 26L, 27R, and 28 . . . " I called Clearance Delivery and was "cleared to 0J6 via the Atlanta 5 DP, vectors to SOTWO, CSG, direct, climb and maintain 4 expect 8 within 10, Departure on 121.0, squawk 4170." I read it back and then changed to Ground. He cleared me to 27R "via Taxiway Dixie, hold short of Runway 26R." I read that back including the hold short requirement and started moving out of the North Ramp on Dixie. The following is part of what I wrote in the ASRS (Aviation Safety Reporting System) report.

It Only Takes A Moment's Lapse

As I approached 26R, Ground instructed me to monitor Tower on 119.1. I changed to 119.1 and, for some reason, the instruction to change to the tower frequency got translated in my mind as a clearance to cross the runway. I heard the Tower give an air carrier a go-around due to someone on the runway and I immediately knew I had blown the clearance; I did an immediate 180 and crossed back to the north side of the hold short line.

This was an absolutely stupid mental lapse. I had the airport diagram in my lap. I knew exactly where I was; in fact, I had previously used a yellow marker to mark the hot spots (I was at HS 1). I only go into KATL about once every year or so. I know it is a hyper-busy air carrier airport, thus I had thoroughly reviewed the charts before the flight. My goal was to be a good aviation citizen and work smoothly in the system. I was alert and spring loaded to move quickly and not delay the air carrier traffic. That mindset was my downfall. As I approached the hold

short line, I saw the landing traffic and it appeared to me to be quite far out so I half expected the Tower to ask me to expedite across 26R. As I said above, when Ground told me to change to tower frequency, that message somehow got translated in my mind as "cleared to cross."

Best Practices and Lessons Learned

How could this have possibly happened? And, what have I learned? Although I studied the airport diagram, I did not capture the implicit as well as the explicit information. If I had done so, I would have been prepared for multiple frequency changes on my taxi route. The airport diagram clearly shows a separate tower frequency for each runway and a different ground control frequency for each runway pairing. In my case, that would have meant starting with Ground on 121.9, then Tower on 119.1, then perhaps back to Ground on 121.9 or Tower on 125.32, then perhaps back to Ground on 121.9 or straight to the last Ground on 121.75, and then finally to Tower on 123.85.

In retrospect, it should have been clear to me that each runway crossing would be handled by its own Tower frequency, and thus multiple frequency changes and some amount of pause at each hold short line should have been expected. It would have been easy to write down the sequence of frequencies in the order they might occur in advance—as I just did above. So, I offer the following "score sheet" in Figure 2 for use as an aid in raising awareness on the potential for runway incursions.

Complexity Factors	Tally
Number of runways to be crossed while taxiing	
Number of charted Hot Spots along taxi route	
Number of Tower/Ground frequency changes expected	
Multipliers	
IMC	
Night	
High airport traffic count	
Unfamiliar airport	
Total	
1 to 2: Low Vulnerability	
3 to 5: Medium Vulnerability	
6 and Greater: High Vulnerability	

Figure 2. A score sheet for systematically evaluating airport complexity.

Complexity Factors	Tally
Number of runways to be crossed while taxiing	2
Number of charted Hot Spots along taxi route	2
Number of Tower/Ground frequency changes expected	5
Multipliers	
IMC	
Night	
High airport traffic count	1
Unfamiliar airport	1
Total	**11**
1 to 2: Low Vulnerability	
3 to 5: Medium Vulnerability	
6 and Greater: High Vulnerability	X

Figure 3. KATL ground operations are very complex! Duh!

If I had used such a score sheet, two things would have happened. First, just filling out the sheet would have led me through a structured approach to internalizing what the taxi situation was likely to be at KATL. Second, my score would have been an 11! (See Fig. 3.)

I could have developed this quantified understanding before I ever left home, and thus would have had a much clearer picture of what to expect during my taxi for departure. Just listing the ground and tower frequencies in the order that I could expect them to be issued would have been a great help in "putting my head in the game." In my post-event self-critique, I used this score sheet on other airports I go into, both in the Atlanta area and elsewhere with the following results:

PDK: 5; FTY: 2; TPA: 4; TLH: 2; PNS: 3

So, with this metric, the second highest score of the airports I use regularly is less than half that of KATL. Oh, how I wish I had done this analysis prior to leaving home!

I close with a final irony and suggestion. On page 4 of the May/June 2011 issue of *FAA Safety Briefing* there is an article on runway incursions, "If You Cross the Line, You've Crossed the Line." It contains four specific good recommendations, one of which is: "Review procedures for airport surface operations at your local airport and the airports you frequent . . ." I would add that we have a special obligation to review the surface operation procedures at airports that we visit less frequently, and even more so at airports with complex runway and taxiway configurations and multiple radio frequency requirements. As a part of this airport review, I suggest looking at the FAA's Runway Hot Spot Safety List at www.faa.gov/airports/runway_safety/hotspots/hotspots_list/.

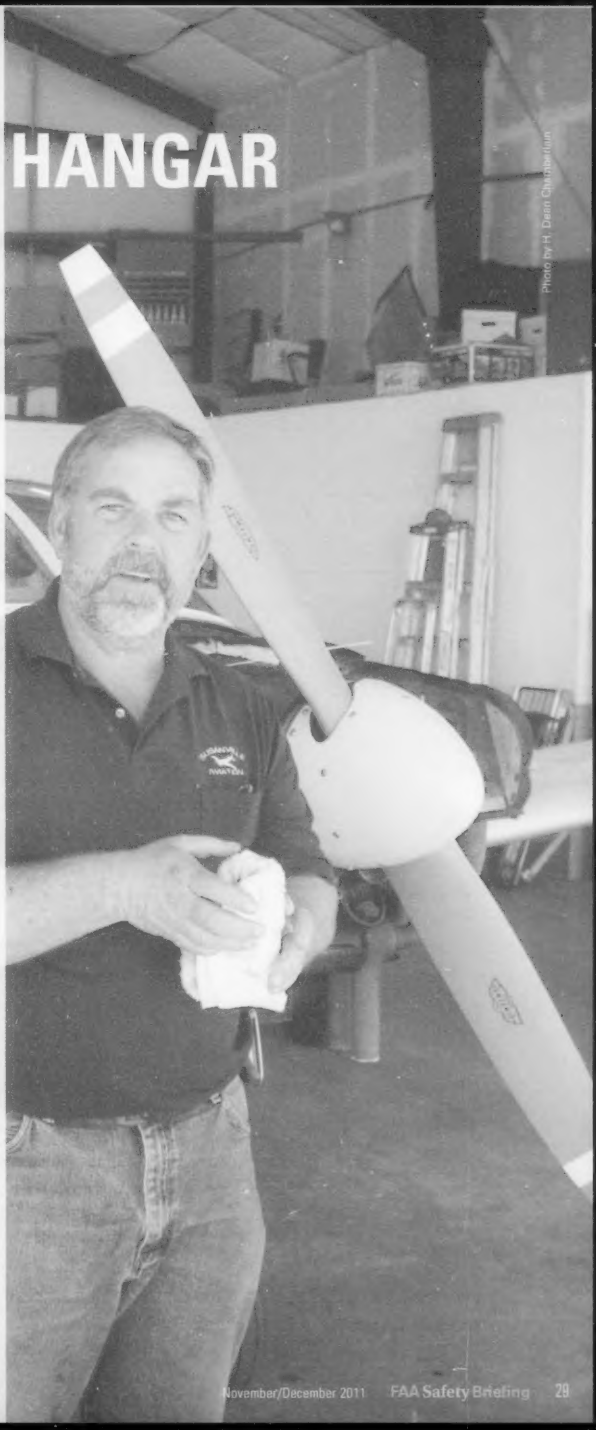
What I did in this incident was contrary to what I teach as a CFI and to the way I have lived and performed in my aviation career. How could this have possibly happened? I will be asking that question for some time... but please learn from my mistake and don't repeat it!

Bill Castlen is a Cirrus Standardized Instructor Pilot, an FAA Master Pilot, an FAA Gold Seal Instructor, a Master CFI, and the FAASTeam Lead Rep with the Southern Region Office.

SUSAN PARSON

HOME SWEET HANGAR

Update on Residential Through the Fence



For those who love aviation, it's not a stretch to imagine that your idea of a dream house might well be, or at least include, a dream *hangar*. Though personal finances are not likely to cooperate in my case, I have often looked enviously at some of the beautiful private airparks I've spotted around the country. Since I live an hour's drive from my home airport – longer in tougher traffic – the idea of living just steps away from my airplane and yards away from the runway is appealing indeed.

That very understandable appeal has led over time not just to the establishment of totally private air parks (i.e., where tenants also own the airport), but also to so-called "through-the-fence" arrangements between private entities, such as private residential airparks located adjacent to public use airports. Through-the-fence (TTF) is typically defined:

> *An agreement that permits access to the public landing area by independent entities or operations offering an aeronautical activity or to owners of aircraft based on land adjacent to, but not part of, the airport property.*

In the case of residential through-the-fence, or RTTF, this arrangement generally involves a residential environment in which a private party constructs a residence that includes an aircraft hangar, and the RTTF arrangement provides the owner with "through-the-fence" access to the airport infrastructure.

So What's the Beef?

As you may be aware, there is considerable controversy over RTTF. From the FAA's perspective, the agency's longstanding policy is to discourage RTTF access to federally-obligated airports. That is because the FAA believes that RTTF arrangements could compromise an airport sponsor's ability to retain the characteristics expected of a public-use

airport. Among other concerns is the possibility that RTTF arrangements may undermine an airport's utility and limit future airport development.

That said, the FAA recognizes the diversity existing within the GA airport community, including various RTTF arrangements. In March 2011, the agency published its interim policy on residential through-the-fence access to federally obligated airports. The interim policy creates a moratorium on new RTTF arrangements, and it requires airport sponsors with existing RTTF arrangements to develop access plans. The access plan must explain how the airport meets its obligations to operate as a public-use airport, and it must detail how the airport sponsor meets standards for control of the airport, safety of operations, self sustainability, protection of airport airspace, and land-use compatibility. Beginning on October 1, 2012, access plans will be due before the beginning of the fiscal year in which the sponsor will request an AIP grant.

The interim policy addresses the FAA's concerns, preserves the access of homeowners with existing RTTF arrangements, and establishes the next step in an ongoing learning process.

Next Steps

The interim policy also states that the FAA will initiate a policy review in 2014 based on the information learned from reviewing access plans as well as from an FAA GA airport study that is currently underway. In the meantime, the interim policy addresses the FAA's concerns, preserves the access of homeowners with existing RTTF arrangements, safeguards the GA community's ability to protect airports from encroachment or undue restrictions on airport access, and establishes the next step in an ongoing learning process for the FAA and all parties with an interest in RTTF arrangements.

Susan Parson is a Special Assistant in the FAA's Flight Standards Service and editor of FAA Safety Briefing. *She is an active general aviation pilot and flight instructor.*

Learn More

FAA Issues Residential Through-the-Fence Policy
http://www.faa.gov/news/updates/?newsId=62676&omniRss=news_updatesAoc

RTTF Access Toolkit
http://www.faa.gov/airports/airport_compliance/residential_through_the_fence/

Airport Improvement Program (AIP): Interim Policy Regarding Access to Airports From Residential Property
http://edocket.access.gpo.gov/2011/pdf/2011-6346.pdf

Keep Informed with

FAA's Aviation Maintenance Alerts

Aviation Maintenance Alerts (Advisory Circular 43-16A) provide a communication channel to share information on aviation service experiences. Prepared monthly, they are based on information FAA receives from people who operate and maintain civil aeronautical products.

The alerts, which provide notice of conditions reported via a Malfunction or Defect Report or a Service Difficulty Report, help improve aeronautical product durability, reliability, and maintain safety.

Recent alerts cover:

- cracked flap nose rib on the Beechcraft A36 *Bonanza*
- failed landing gear power pack on the Piper PA-28-RT201 *Arrow IV*
- failed fuel pump on the Lycoming IO-360-L2A engine

Check out Aviation Maintenance Alerts at:
http://www.faa.gov/aircraft/safety/alerts/aviation_maintenance/

TOM HOFFMANN

Nuts, Bolts, and Electrons

Are You Actively Engaged?

In August 2011, the FAA released a notice of policy that clarified the term "actively engaged" for an IA (Inspection Authorization). Current regulations state (among other requirements) that an IA must be actively engaged in maintaining aircraft for a two-year period before obtaining or renewing an IA. The following series of questions and answers are designed to provide further explanation of the changes.

Why was there a change made?

For many years, the meaning of the term "actively engaged" has confused both ASIs and aviation maintenance personnel alike. Adding to the confusion is the term's lack of definition in Title 14 of the Code of Federal Regulations (14 CFR) and its inconsistent application in various guidance materials. To prevent further confusion, the FAA issued a notice of proposed policy in November 2010, and after careful consideration of nearly 1,000 comments, issued an official notice of policy in August 2011 that provided clarification of the term actively engaged.

Was this a rule change?

No. The notice of policy issued was a clarification of an existing rule, not a rule change. The only changes were made to FAA Order 8900.1, which provides guidance for aviation safety inspectors (ASIs) to issue an initial or renew an existing IA.

What does this mean to me as an IA? What will be different when it comes to renewal?

If you have been successful in meeting the biannual requirements for IA renewal based on the FAA's original understanding of actively engaged (i.e., employed full time in inspecting, overhauling, repairing, preserving, or replacing parts on aircraft consistently), no changes are needed.

By broadening the definition of actively engaged, however, IAs can now meet the actively engaged requirements with part-time or occasional aircraft maintenance activities, regardless of employment status or if the activities are performed infrequently. The actively engaged clarification also extends to those who provide technical or executive supervision of maintenance activities. In each of these cases, however, the FAA has determined that IAs may need to provide evidence or documentation of the work they perform. This includes employment records showing performance or supervision of aircraft maintenance, return to service documents, and/or copies of maintenance record entries.

Previously, the FAA did not consider an IA involved solely in an academic environment as being actively engaged. However, now a technical or part 147 school instructor, who engages in the maintenance of aircraft (or aircraft-related instruction equipment) can be considered actively engaged. Furthermore, individuals employed as a manufacturer's technical representative, maintenance coordinator, or maintenance auditor can also be considered actively engaged depending on the activity demonstrated.

I am a retired IA, but do occasional maintenance on several different WWII-era vintage aircraft in different parts of the country. Can I still be considered actively engaged?

Yes, provided you are able to show that the proper documentation and/or evidence of the maintenance you perform demonstrates that you are actively engaged. The FAA recognizes and values individuals with special expertise (wood structures, fabric coverings, radial engines, etc.) and those that inspect rare or vintage aircraft in rural areas not serviced by an abundance of IAs. Incorporating the need for these specialized skill sets allows the FAA to better value the substantive nature of experience rather than base a determination of IA renewal eligibility strictly on quantity and frequency of aviation maintenance activities.

What if I have a situation that doesn't exactly fit the parameters of actively engaged under its revised definition?

In developing the policy statement, the FAA could not list out every situation that could be interpreted as being actively engaged. That approach

may exclude situations that an ASI would otherwise determine as meeting the requirements. Instead, ASIs will have the ability to examine any supporting documentation and/or other evidence to determine if a certain situation meets the requirements for being actively engaged.

Does this affect me if I am an AMT, but not an IA?

The parameters for being actively engaged only apply to those either renewing, or applying to be an IA. For an AMT pursuing an IA, he/she may now apply the broader definition of actively engaged to satisfy the two-year eligibility requirement as stated in 14 CFR section 65.91(c)(2).

What type of documentation must I present to prove I meet the requirements of being actively engaged?

When required, documentation could include records showing performance or supervision of aircraft maintenance, return to service documents, and copies of maintenance record entries (e.g., Form 337, maintenance logbook entries, equipment lists). The FAA expects documentation will establish an applicant's continued contributions to the aviation industry and ability to demonstrate compliance with 14 CFR section 65.91(c)(1)-(4).

When will this change take effect?

The FAA will make this policy effective for the next inspector renewal cycle in March 2013 to allow IAs and aviation safety inspectors adequate time to participate in the required activity. IAs are issued for two years and expire on March 31 of odd-numbered years.

Why can't attending training satisfy the requirements for being actively engaged?

While an IA can satisfy the 14 CFR section 65.93 two-year renewal requirements with eight-hour training classes and/or oral exams, he/she must still meet the requirements of 14 CFR section 65.91 (1)-(4), which includes being actively engaged for at least the two-year period prior to the renewal. The requirements for being actively engaged are designed to provide IAs (and IA candidates) with a level of knowledge and active experience needed to perform in a safe and professional manner. While training is an excellent method of sharpening a mechanic's knowledge base and helping him/her learn about new technologies, by itself it cannot replace the skills and hands-on experience gained by being directly involved with aircraft maintenance activities. Therefore, being actively engaged (while having been expanded to include those with specialized experience or those performing in a supervisory or instructor capacity) must still entail direct involvement in aircraft maintenance activities beyond just training.

The actively engaged issue is complex, but going forward, the FAA hopes to continue to foster a professional emphasis for the IA as the backbone of general aviation maintenance. For more information, you can view the new notice of policy on the Federal Register at: www.gpo.gov/fdsys/pkg/FR-2011-08-04/pdf/2011-19741.pdf.

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TOM HOFFMANN

Angle of Attack

Chartering a Safe Course

Aviation Rulemaking Committee Looks to Improve Pilot Testing

In front of more than a thousand pilots and industry experts gathered at this year's Aircraft Owners and Pilots Association (AOPA) Aviation Summit in September, FAA Administrator Randy Babbitt announced the establishment of an Aviation Rulemaking Committee (ARC) that will seek to address concerns about the relevance of the FAA's airman testing and training standards. This initiative is part of the agency's five-year plan to improve GA safety and, like other parts of the plan, will be accomplished in partnership with the GA community.

The ARC will provide a forum for key players in the general aviation training community to offer their experience and expertise and recommend ways to improve airman testing and training policies.

"The people who work day in and day out on the flight lines of aviation safety, training, and assessment are the ones who know where the shortfalls are, and where we're a little thin in training procedures," said Babbitt during his speech at the AOPA Summit. "They can also provide the best insight on what kind of knowledge pilots need to operate safely in today's national airspace system."

Reflecting a truly diverse and collaborative effort, the ARC's membership will include participants from AOPA, the National Association of Flight Instructors (NAFI), the Society of Aviation and Flight Educators (SAFE), and the AOPA Air Safety Institute, along with several training providers, universities, and professional associations. The ARC will be co-chaired by the General Aviation Manufacturers Association (GAMA).

Once convened, the ARC will create a list of five airman certificates and/or ratings to focus on, and submit this list within 60 days of its initial meeting. In addition, the ARC will develop and recommend:

- An aeronautical knowledge standard for the selected certificates and ratings. The aeronautical knowledge standard for each certificate and/or rating should set forth the overall precepts that will conceptually frame, guide, and justify its specific technical subject areas.
- Methods for regular industry participation in the planning, development, production, and review of technical information (e.g., training handbooks, knowledge test guides, and supplements) intended to convey the elements of the knowledge standard.
- Precepts for development and appropriate review of updated knowledge tests that will accurately and reliably measure the airman's mastery of the aeronautical knowledge standard. This task should include recommendations on types of questions to be included.

The ARC is part of the agency's five-year plan to improve GA safety and, like other parts of the plan, will be accomplished in partnership with the GA community.

To help facilitate progress on these initiatives, the ARC may propose forming standing committees or working groups among its members. It may also form specialized workgroups that will be able to invite subject matter experts from industry and government as needed. The ARC will submit a report with its final recommendations within 12 months.

"We don't have all the answers for GA safety so we need your help," said Babbitt. "Together, we're going to work to find ways to improve the system."

Be on the lookout for progress with the ARC in future issues.

Tom Hoffmann is associate editor of FAA Safety Briefing. He is a commercial pilot and holds an A&P certificate.

JAMES WILLIAMS

Vertically Speaking

Are You Ready for the Winter?

Flying in the winter offers some unique challenges for the rotorcraft community. Temperatures drop, the days get shorter, and snow/ice/sleet become a real possibility for much of the United States. To prepare for this change in season, consider making a few changes that apply to both you and your aircraft to ensure safe winter operations.

The Aircraft

Just as there are things you can do to get your airplane ready for the winter, there are things you can do for your helicopter. While what you might find will vary from helicopter to helicopter, there is one fact that is almost universal: It is rare for a helicopter to be equipped for flight into known icing conditions (FIKI). One of the items you might find, though, is a deflector, which keeps the intakes from being clogged with blowing snow. A simple, but sometimes overlooked item is pitot heat. Some helicopters also require the addition of a continuous ignition system.

Another concern during winter operations is rotor icing. Even though the rotor blade is moving through the air rapidly, it can still accumulate ice. As with fixed-wing aircraft, the best anti-icing strategy is to avoid potential icing when possible.

The Preflight

The preflight really begins before you even get to the aircraft. You can use tools like the National Weather Service's aviation icing forecast tool to help inform your go/no-go decision (http://aviationweather.gov/adds/icing/icing_nav.php). You should also check out the experimental Health Emergency Medical Services (HEMS) tool at: http://weather.aero/tools/desktopapps/hemstool. Before you even get to the airport, though, a review of the helicopter flight manual is well warranted. Some helicopters have different limitations, especially with regard to flight in blowing snow.

Checking fuel is an even bigger concern as the temperature drops. With the addition of cold weather additives comes a new threat, known to the rotorcraft community as "apple jelly." A gelatinous formation of water, cold weather additives, and miscellaneous components, "apple jelly" can clog fuel filters and other portions of the fuel system. The best countermeasure for avoiding this gloppy mass is to ensure that you regularly sump fuel tanks on the aircraft to keep water from getting into the fuel.

During your hands-on preflight, there are a couple of additional things to check during the winter. First is to ensure that the engine's anti-ice system is working. This system is generally required for cold-weather operations and it is not likely to have been checked during the warmer months. Also, ensure that intake filters are clear of ice or frost. Even a thin covering could possibly choke the engine's ability to "breathe" and produce power. Many helicopters also require preheating so components and engine oil are warm enough to work properly. Finally, there is the issue of making sure the aircraft isn't stuck to the ground. It may sound odd to a fixed-wing pilot, but since helicopters sometimes operate from remote locations, it is possible. And, if one skid is frozen more than the other, this condition could create potential for a dynamic roll over.

The Flying

For any pilot in the winter, it's a good idea to sharpen up your night-flying skills and situational awareness. Another area to brush up on is aircraft limitations and procedures, and to take note of any updates and changes. One such change is the required use of engine anti-ice. Unlike some fixed-wing aircraft, many helicopters require the use of engine anti-ice throughout the flight. It's important to remember, though, that the engine *anti-ice* is an anti-ice system, not a *de-ice* system.

Hopefully this is a good start for your rotorcraft winter flying checklist. Let us know what other things you like to include on your personal winter checklist. Safe flying!

James Williams is FAA Safety Briefing's assistant editor and photo editor. He is also a pilot and ground instructor.

Flight Forum

The Compleat Aviator

The Compleat Aviator suggests I could improve my pilot skills and enjoy the process by getting more ratings. I can't do that because I am in the "Dead End" of pilot growth created by the new Sport Pilot rule. I have held a private pilot certificate since 1971, but I do not have a medical certificate. I'd love to get an instrument rating, multi-engine, or other such thing. But the FAA thinks those things can't be safely done unless the aeromedical bureaucrats bless my health. So the article should have been addressed to those pilots still in the good graces of the medical bureaucrats instead of seeming to include "Dead Enders" like me.

Paul Mulwitz
Camas, WA

Thanks for your feedback. Although lack of a valid pilot medical certificate does limit the privileges an airman can exercise as pilot in command, it does not create a barrier to training for the purpose of improving proficiency or personal enjoyment. In fact, we know several pilots who follow the "Mount Everest" principle — "because it's there!" — as a rationale for adding certificates, ratings, and endorsements. With regard to the effect of the Sport Pilot rule, we respectfully disagree with the characterization of its impact. As we see it, the rule added to the diversity of options that pilots have to enjoy aviation.

Type II Diabetes Mellitus

Good magazine. I would like to comment on Dr. Silberman's answer to the question below in the September/October 2011 issue. Here is the question and answer:

"I am an instrument-rated private pilot. I have type II diabetes mellitus. I have a special issuance third-class medical certificate now. I would like to know if I would qualify to obtain a commercial pilot certificate. I have no other health issues. Answer: If you are being treated with any type of insulin for your diabetes, the FAA only grants a waiver for private pilot or third class."

While Dr. Silberman's answer was informative, it would have been relevant to also explain that the person who wrote the question can qualify for a commercial pilot certificate (or an Airline Transport Pilot certificate, for that matter) with a third-class medical. That person cannot perform duties of a PIC without the appropriate medical certificate, but the person can earn and obtain the certificate.

Sebastian (Vince) Massimini, D.Sc.
The MITRE Corporation

Thanks for pointing that out; you are correct.

CFI Training

I am training two CFI candidates from different aviation schools. I have used numerous articles from *FAA Safety Briefing* to help introduce and illuminate certain subjects. "Getting it Right: Maneuvering Flight" (M/A 2010) was especially helpful. Thanks for all your great work!

David St. George, DPE, MCFI

We're glad you find the articles useful, and we are always happy to hear suggestions for future topics of interest or benefit to the flight training community.

FAA Safety Briefing *welcomes comments. We may edit letters for style and/or length. If we have more than one letter on a topic, we will select a representative letter to publish. Because of publishing schedule, responses may not appear for several issues. While we do not print anonymous letters, we will withhold names or send personal replies upon request. If you have a concern with an immediate FAA operational issue, contact your local Flight Standards District Office or air traffic facility. Send letters to: Editor, FAA Safety Briefing, AFS-805, 800 Independence Avenue, SW, Washington, DC 20591, or e-mail* SafetyBriefing@faa.gov.

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SUSAN PARSON

Postflight

Airport Appreciation

Aviation aficionado that I am, I have always loved airports. One of my enduring childhood memories is the overwhelming sense of wonder and excitement I experienced when my family went to the Greensboro Airport's observation deck to await the arrival of a visitor's flight. I loved watching the airplanes come and go, and I had to be dragged away when our guest eventually turned up. While normal kids might have petitioned their parents for trips to the playground, I pestered mine with pleas for another stint on the GSO observation deck.

Though changes occasioned by the events of September 11 have sapped some of my enthusiasm for the larger air carrier airports, I still love airports. And I don't entirely jest when I describe a certain general aviation (GA) airport in Northern Virginia as my second home. Much like the tavern in the long-gone "Cheers" sitcom, my home airport is populated by a clutch of regulars, and it's a place where everyone knows your name. More to the point, it's a place where everyone knows your *plane*.

It's important for us "regulars" to extend a warm welcome when strangers call at our home airport, and ensure that their experience there is both positive and memorable.

As I wrote in "Venturing Further Afield," I recently participated in the Virginia Department of Aviation's Virginia Aviation Ambassadors program. The idea is to visit each of the state's 66 public-use airports, and document the visits by collecting an airport-specific stamp for each one in the official passport booklet. One of the best discoveries was finding that my home state is full of airports like the one I call home — places where pilots gather not just to fly, but also to hang out with like-minded friends. I also discovered that my home state's GA airports are warm and welcoming to visitors. Starting with the friendly line service staffer who marshaled me to a transient tie-down, I found the camaraderie of kindred spirits everywhere. At larger places, FBO staff cheerfully provided whatever service was needed and invariably expressed interest in the status of my VA Aviation Ambassadors passport stamp collection quest.

That was even more true at smaller airports, where I often found at least one or two other passport stamp collectors who were eager to compare progress and trade stories. The most common question was, "Have you been to Grundy (KGDY) yet?" The follow-up question was typically, "How about Falwell (W24)?" I heard enough about both to do my homework before launching ... if you're curious, read the entries in the *Airport/Facility Directory*, or consider a virtual visit via Google Earth.

In addition to renewing my faith in the good nature and basic kindness of people everywhere, the aviation passport collection tour inspired — and reminded — me how important it is for us "regulars" to extend a warm welcome when strangers call at home base and ensure that their experience is both positive and memorable. As authors Joseph Pine and James Gilmore write in their book on *The Experience Economy*, "It is the positive personal interaction that makes a visit memorable enough to prompt repeat business." And even though most of us are not in the FBO business *per se*, the overall decline in the pilot population and constant economic pressure on our beloved home base airport means that it is very much our business to support, promote, and thus protect them in any way we can. So, next time you see an unfamiliar face at your home airport, extend a hand, make a friend, and create a fan who will appreciate your airport as much as you do.

Susan Parson (susan.parson@faa.gov, or @aviBrix for Twitter fans) is editor of FAA Safety Briefing *and a Special Assistant in the FAA's Flight Standards Service. She is an active general aviation pilot and flight instructor.*

TOM HOFFMANN

FAA Faces

Amy Anderson

Amy Anderson, FAA Wildlife Biologist

If there's one person who could benefit from having the parlance powers of the venerable Dr. Dolittle, it would certainly be FAA Wildlife Biologist Amy Anderson. Although lacking any telepathic skills (except maybe with her dog Phoebe), Anderson does take great pride in her work to maintain a harmonious balance between two uniquely different worlds: wildlife and aviation.

For Anderson, growing up in central Michigan helped spark an early interest in nature. She spent much of her time outdoors and was fascinated by the diversity and interaction of the natural world. And, after a 7th-grade biology report on dolphins, she seemed destined for a career involving wildlife.

After studying Marine Science and Biology at Coastal Carolina University, Anderson spent time working at both an aquarium and science museum before beginning a career in environmental science. For 10 years, Anderson worked with wetland and wildlife monitoring. She also became involved with wildlife hazard assessments and management plans, which eventually led to her involvement with airports. "I found it to be a very interesting field," says Anderson. "It combined wildlife and their habitats, two of my favorite things!"

That combination forms the core of her current responsibilities as one of two wildlife biologists employed by the FAA. Among her specific duties are assisting the regional FAA offices with wildlife issues at airports, writing policy and guidance on reducing wildlife hazards, and leading the GA wildlife hazards initiative.

"I feel I bring a unique perspective to this position because of my airport experience in the private sector," states Anderson. "Now that I work for the FAA, I can see both sides of the challenges that small airports face with wildlife hazards."

One of the tasks Anderson is most passionate about is her role in educating the public about wildlife risks to aviation. While birds are the biggest contributor to aviation wildlife strikes overall, deer are actually the biggest risk at GA airports. According to Anderson, deer strikes account for more than 50 percent of all wildlife strikes at GA airports. This is mainly due to many small airports being in proximity to rural forested areas, a haven for deer.

But, it's not just birds and deer that are hazards. Anderson can cite reports of alligators, coyotes, moose, and yes, even a fish strike! Apparently an osprey flying over Rhode Island got spooked by a US Airways jet and dropped the fish it was carrying. The fish hit the jet's radome and did considerable damage.

"When it comes to creating effective wildlife hazard mitigation strategies, pilots are a big piece of the puzzle," says Anderson. "By reporting wildlife strikes, pilots can help airports become more aware of wildlife issues they may have, and create more effective mitigation programs." Reporting also helps alert fellow pilots of hazardous conditions and can help show whether mitigation strategies are effective.

For those pilots who may be hesitant to report a strike, Anderson recommends filing the report anonymously. "What's important is to learn the specifics of what and where an event occurred, not who is reporting it." Anderson adds that the reporting process has been made easier, and can now be done using a smartphone. (See "Splat" on page 22 for more.)

When it comes to future of wildlife strike mitigation at small GA airports, Anderson is optimistic about improvement. "The next generation of wildlife safety strategies should be exciting, especially as more components of NextGen come on line." Anderson foresees tapping in to the capabilities now offered with avian radar to an onboard system that can give pilots a more real-time warning of a wildlife hazard.

In the meantime, says Anderson, it's important to remain educated about wildlife hazards at all times. Staying smart about wildlife will help ensure there's room for both animals and airplanes to safely share the skies.

Tom Hoffmann is associate editor of FAA Safety Briefing. *He is a commercial pilot and holds an A&P certificate.*

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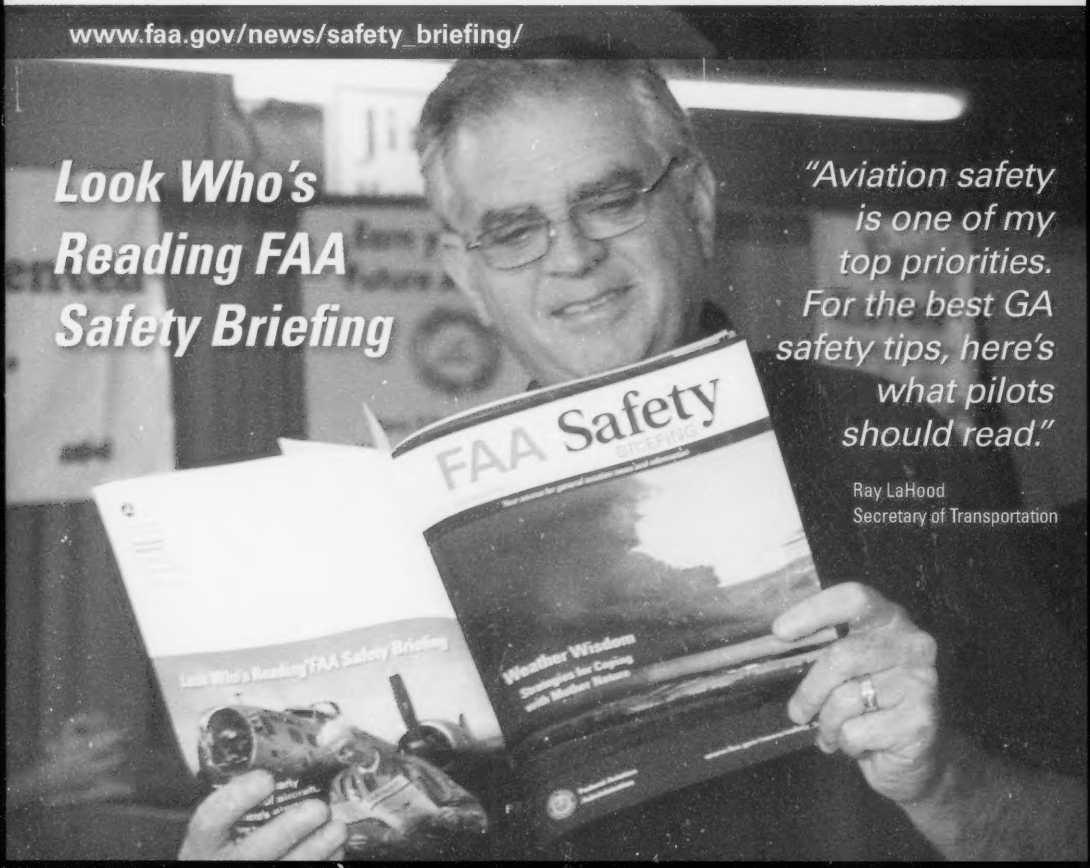
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